DOCUMENT RESUME

ED 063 675 08 EA 004 389

AUTHOR	Sebastian, Roland
TITLE	Coordination of Organic Curriculum Development in the Public Schools of Breathitt County, Kentucky. Final Report.
INSTITUTION	Breathitt County Board of Education, Jackson, Ky.
SPONS AGENCY	National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
BUREAU NO	BR-8-0314
PUB DATE	1 Jun 72
GRANT	OEG-0-8-080314-2831(085)
NOTE	96p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Behavioral Objectives; Curriculum Design; *Curriculum Development; Educational Coordination; *General Science; Individual Development; Instructional Materials; Program Administration; Secondary Education; *Student Centered Curriculum; *Vocational Education
IDENTIFIERS	Breathitt County; ES 70; Learning Packages

ABSTRACT

This document describes the efforts of program administrators to implement an organic curriculum in the Breathitt County, Kentucky, High School. The chief program administrator coordinated efforts to develop instructional materials and a general science curriculum that would combine academic education with vocational preparation and personal development. Organic curriculum is a learner-centered rather than a teacher-centered course of study utilizing learning packages specifying behavioral objectives. (Parts of Exhibits II, III, IV, and VII may reproduce poorly.) (RA)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

ED 063675

Final Report

FILMED FROM BEST AVAILABLE COPY

Project No. 8 - 0314
Grant No. OEG - 0 - 8 - 080314 - 2831 (085)

Author of Report:
Roland Sebastian, Coordinator
Guidance, Research and Curriculum Development

Grantee:
Breathitt County Board of Education
1140 Main Street
Jackson, Kentucky

Principal Investigator:
William N. Ryan, Coordinator
Research and Development

Title:

COORDINATION OF ORGANIC CURRICULUM DEVELOPMENT IN THE PUBLIC SCHOOLS OF BREATHITT COUNTY, KENTUCKY.

Date of Submission:
June 1, 1972

EA 004 389

U.S. OFFICE OF HEALTH, EDUCATION, AND WELFARE

Office of Education

Bureau of Research

ABSTRACT

In 1967 the Breathitt County High School was one of 18 across the nation selected by USOE/Bureau of Research to develop and implement the "Organic Curriculum" - an approach to a truly comprehensive secondary educational system. The initial funds were provided for this effort persuant to the provisions of section 4(c) of the Vocational Education Act of 1963 under grant number 8-0314, project number OEG-0-8-080314-2831(085). The discipline selected for development was science.

Although nationally the "Educational Systems for the Seventies" (ES'70) aborted, the curriculum development and implementation efforts of the local staff have been recognized by the Associate Commissioner, Bureau of Elementary and Secondary Education, and have received continuation funding directly from his office under Title III, ESEA. FY'71 funding was provided from the Commissioner's "Discretionary Programs Division". The final revised General Science Curriculum (9th grade) is behaviorally stated in accordance with both locally and nationally validated behavioral and performance concepts. The ninth grade students at Breathitt County High School are presently engaged in these learning experiences..

* * * * * * * * * * * * * * * * * * *

Final Report

Project No. 8 - 0314
Grant No. OEG - 0 - 8 - 080314 - 2831 (085)

Title

COORDINATION OF ORGANIC CURRICULUM DEVELOPMENT IN THE PUBLIC SCHOOLS OF BREATHITT COUNTY, KENTUCKY.

Author

Roland Sebastian, Coordinator
Guidance, Research and Curriculum Developement

Institution

Breathitt County Board of Education
1140 Main Street
Jackson, Kentucky 41339

Date of Submission

June 1, 1972

The research reported herein was performed pursuant to a grant with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

* *

TABLE OF CONTENTS

INTRODUCTION--following

THE ORGANIC CURRICULUM------------------------ pages 1 - 3

EXHIBITS 1 through 12------------------------------- as tabbed

APPENDIX A -- as tabbed

* *

10

Introduction

The following excerpts were extracted from the originally approved and funded proposal submitted to the U.S. Commissioner of Education, under the provisions of section 4(c) of the Vocational Education Act of 1963.

Purpose:

To establish the position of coordinator of a program to develop a student - centered, comprehensively reorganized research - based curriculum providing for the academic, occupational and personal development of high school students in the Breathitt County High School. The central focus of this new curriculum is that it be based upon behavioral objectives rather than traditional disciplinary lines.

Problem Statement:

Industrial development and technological advance have moved the economy of the United States in such a direction and at such an accelerating rate that the cost of having unskilled high school graduates without concrete plans to acquire further education is prohibitively high. At the present time no more than twenty per cent of the high school population eventually graduates from college and the number of high school students receiving training for a skilled occupation is of the order of ten per cent. The remaining seventy per cent of the high school population is obviously not optimally served by the traditional secondary school program.

While this problem of inadequate presentation of educational opportunity and choice should be of national concern, it is doubly important in a school system like Breathitt County. Because of the economic and geographic isolation which exists in the region, many of the post-high school educational opportunities, such as industry training programs and apprenticeship programs, are not available to high school graduates. Additionally, the lack of industrial development in the area precludes the informal exposure of students to a wide variety of types and levels of skilled and technical occupations from which they might choose a vocation which is compatable with their ability and interests. When to these students college graduation appears unattainable and other alternatives are unknown, the offering of traditional education at the secondary level becomes hollow and irrelevant. The result of such an attitude is a high drop-out rate, disinterest in continuing education, low rates of employability and a continual reinforcement of the cyclical marginal subsistance economy.

Through the leadership of the position outlined in this proposal the

Breathitt County School System will join with sixteen other school systems across the country in an attempt to develop a secondary school curriculum that serves all segments of the school population. This program proposes to develop a learner-centered curriculum which fuses academic preparation, occupational education and personal development so that educational relevance is achieved for each segment of the school population. This program will be based upon the best available educational research and all available educational technology. Through this broad program it is hoped that maximum educational efficiency can be attained. This curriculum has been refered to as the organic curriculum.

Objectives:

During the life of the project the project coordinator will work toward the following objectives:

1. Develop a comprehensive, student-centered curriculum which incorporates academic education, vocational preparation and personal development.

2. Develop strategies for effecting educational change in the local school system.

3. Provide for community acceptance of the program through community education.

4. Educate the system's teachers in the understanding of and the statement of behavioral objectives.

5. Lead in the adapting of the output of other centers and contract agencies to the local school system.

6. Plan for the exception to administrative regulation such as minimal college entrance requirements.

7. Enlist community assistance in the organic curriculum.

8. Enlist the assistance of professional educators at the regional and state levels.

9. Develop instructional media and instructional methodology for use in this curriculum.

10. Develop evaluative criteria for the locally established curriculum and cause constant evaluation to be made of the outcomes of that curriculum.

11. Provide laision to other centers where the development of the organic curriculum is underway and to the U.S. Office of Education.

* * * * * * * * * * * * * * * * * * * *

Note 1. Appendix A contains exerpts extracted verbatim from the required quarterly reports submitted by Mr. William Ryan, Project Coordinator, pursuant to the provisions of grant number OEG-0-8-080314-2831(085), project number 8-0314.

Note 2. Exhibits 1-12 are copies of original letters, statements, etc., pertinent to the development and implementation of the "Organic Curriculum".

THE ORGANIC CURRICULUM

In 1967 the Breathitt County High School was chosen to participate in the ES'70 (Educational Systems for the Seventies) Project. This was perhaps the most massive curriculum development effort ever undertaken in this nation. (See Exhibit I) In March, 1968, Mr. William N. Ryan was employed as coordinator of the Breathitt County Project. This gentleman possessed great vision and extraordinary imagination and a keen sense of knowledge relative to the changing processes necessary in education. Due to the lack of funds and the abortion of the ES'70 Project much of what was projected never materialized.

During the latter part of 1968 and through June of 1969, salaries for the coordinator and his secretary were paid by the Counties Title III, ESEA Project due to the unavailability of granted funds from the U.S. Office of Education under the provisions of section 4(c) of the Vocational Education Act of 1963.

To enhance the efforts in Breathitt County an Inter-University Staff was organized. These Professors from the various institutions of higher learning were consultants and teachers in the in-service training classes in the preparation of writing behavioral objectives. The discipline selected for Breathitt County was general science. During October, November and December of 1968, in-service training was provided for all teachers, administrators and vocational people with 92% in attendance. From January through May of 1969, indepth training was provided for a 10 member writing team. During this intensive training we were visited by Dr. Robert Morgan, USOE; Dr. Tom Embry and Dr. Ken Smith, ES'70 Coordinator. From the aforementioned persons and the Inter-University personnel came considerable knowledge and direction in preparation for writing the General Science Curriculum. (See Exhibit II) During this period our writing team made visits to the University of West Virginia; Nova Schools, Fort Lauderdale, Fla.; and Duluth, Minnesota.

During the summer months immediately following, a behaviorally stated, general science curriculum was written. Also, during the summer of 1969, we did some renovation of the physical plant in order to have a large learning area. When school opened in the Fall of 1969, this curriculum was introduced and implemented for approximately 400 students. This curriculum was written at three levels and labeled basic, achievement and honors. It was determined later by our consultants and our own teaching personnel that this particular type of writing was not sufficient to serve the needs of all our students and this caused us to begin consideration for the first revision. Our first major problem arose with the inability of teachers to play the proper role in this innovative process even though a great deal of effort had been injected to bring about this role change.

During this initial period of implementation in was felt necessary to obtain the services of someone highly trained in testing and evaluation. Dr. Jack Morgan who was with the USOE during the conception of the ES'70 Program and was at this time, professor of education at the University of Lowisville, Ky., was contracted with to provide these services. (See Exhibit III) Dr. Morgan's work was scrutenized thoroughly by the five member evaluation team, Dr. Arno Jewett, Chairman et al, November 29 - December 4, 1970. (See Exhibit VII, Part V-I)

To a degree our efforts in implementation during the 1969 - 70 school year were some what on a trail and error basis. However, two things were very evident; 1. more training was needed in teacher preparation and 2. the curriculum needed to be revised. Therefore, during the summer of 1970 we revised the curriculum and attempted to prepare teachers capable of proper implementation. This revised curriculum was implemented in the Fall of 1970 for freshman students only (app. 325).

During this period of time we were faced with problems relative to sufficient funding and the quality of the product being implemented in our learning area. Many people came to visit our program including local and state-wide personnel. We also were honored by various groups and individuals evaluating the product we had produced and methods of implementation. (See Exhibits IV - VII)

During the first half of the 1970 - 71 school year we realized the need for furthur revision of our curriculum. Various individuals and groups who did evaluations contributed greatly to this effort. During the second half of the 1970 - 71 school year and during the summer of 1971 we completed the second revision according to the recommendations made by Dr. Arono Jewett, et al. Copies of this curriculum have been submitted to the U.S Office of Education through Mr. Lawrence Redmond, Chief of Program Voucher Unit, Fiscal Services, 400 Maryland Ave. S.W. Rm. 3085, Washington, D.C.

We are now implementing the second revision to the 9th grade students (app. 325). Our Title III, people have visited our science learning area and have submitted evaluation reports. (See Exhibits VIII - X)

The development of curriculum material is a difficult process. Breathitt County has been fortunate to have the services of Mr. Robert S. Lawson to direct the curriculum development process. This gentleman possesses great insight in the development process and also in implementation. We consider it a great asset to have Mr. Lawson in the upgrading of this curriculum. (See Exhibit XI)

Mr. Millard Tolliver, principal of the Breathitt County High School, has been very patient, considerate and understanding in the development and implementation of this curriculum. His support has greatly enhanced our effort and we are very greatful to him. (See Exhibit XII)

May I at this time express the deep gratatude of all the school personnel in Breathitt County for the assistance provided through the U.S. Office of Education in making this project successful. We appreciate very much the moneys granted to this project and even more the helpfulness of the personnel in the U.S. Office of Education.

Our efforts are now a reality.

The State evaluators have been very helpful and have expressed their support as indicated by Mr. Ray Muffett. Our State Title III Coordinator, Dr. Richard L. Winebarger, has concurred with the State evaluator as evidenced by his letter, attached. You will note that Mr. Fowler E. Jeffries has committed his office to assist in the dissemination process.

We cordially invite the U.S. Office of Education to visit and review our general science program. Due to the effect of tha in-service training for our teachers and the results obtained through this effort we have witnessed considerable interest in other discipline. Therefore, we are beginning an effort to develop a similar program in the Language Arts. You will perhaps be hearing more of this effort at a later date.

We encourage all interested parties to visit with us and/or contact us for information which we will be happy to supply. Direct all inquiries to the office of:

Mr. Roland Sebastian, Coordinator
Guidance, Research and Curriculum Development
Breathitt County Board of Education
1140 Main Street
Jackson, Kentucky 41339

Exhibit I

ES'70 SUMMARY STATEMENT

ES'70 constitutes the most massive curriculum development ever undertaken in this nation. ES'70 is a cooperative local-state-federal program for the development of a new comprehensive secondary school organic curriculum and organization designed to provide an individually prescribed blend of vocational and academic instructional modules which will provide an individualized education for each student, based upon his own behavioral objectives, highly relevant to his experience and his aspirations and to the adult roles which he will play, and economically practical within available public resources. The ES'70 Network vehicle consists of eighteen school districts, fifteen state departments of education, and U. S. Office of Education, together with many universities and governmental and private agencies spanning the nation. Three per cent of the nation's total secondary enrollment, 1.3 million students, are represented by the school districts in the project. USOE initially budgeted over seven million dollars for ES'70 activities in the next fiscal year; over ten million dollars in the following year. This has been critically reduced by lowered appropriations for educational research. The organic curriculum, based upon behavioral objectives, is being written by teachers, staff and consultants, backed up by curriculum development in major universities across the country. Educational facilities planning, data processing of comprehensive student records and day-to-day flexible scheduling by computer are included phases in the systems analysis (PERT chart). Computer-managed and computer-assisted instruction methods and media will become part of the mode-media mix to be developed and instituted over the five year span of the development phase. To assist the teachers in the transition from their role as technician to that of diagnostician, an extensive in-service education program has been instituted and will be further developed and continued. The national accrediting associations are developing new criteria for the accreditation of the ES'70 behaviorally objective curriculum. The student, the focal point of all educational endeavor, upon graduation will be prepared for employment at entry level in his chosen occupation; for entrance into advanced vocational-technical education; technician-level education (AA degree generally), or to enter the four-year higher education system.

Exhibit II

ES'70 INTER-UNIVERSITY COUNCIL MEMBERS

Dr. Daniel S. Arnold, Director of Research
College of Education
University of Kentucky
Dickey Building
Lexington, Kentucky 40506
Phone: (606) 258-9000 ext. 2771

Dr. Ronald Atwood
Department of Curriculum and Instruction
University of Kentucky
Lexington, Kentucky 40506
Phone: (606) 258-9000

Dr. Harry Barnard, Chairman
Department of Curriculum and Instruction
University of Kentucky
Lexington, Kentucky 40506
Phone: (606) 258-9000

Dr. Leonard Burkett
School of Education
Morehead State University
Morehead, Kentucky 40351
Phone: (606) 783-2221

Mr. Don Holloway
Associate Professor of Communications
Morehead State University
Morehead, Kentucky 40351
Phone: (606) 783-2221

Dr. Crayton Jackson
Department of Science and Math
Morehead State University
Morehead, Kentucky 40351
Phone: (606) 783-2221

Dr. Jack Morgan, Associate Professor
Secondary Education
University of Louisville
Louisville, Kentucky
Phone: (502) 636-4963
(See Exhibit III)

Mrs. Geneva Owens
Assistant Professor of
English and Education
Eastern Kentucky Universit
Richmond, Kentucky 40475
Phone: (606) 622-3884

Morris D. Taylor
Associate Professor
College of Arts and Science
Department of Chemistry
Eastern Kentucky Universit
Richmond, Kentucky 40475

NOTE:
Evaluations received follow this sheet.

UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
DEPARTMENT OF CURRICULUM AND INSTRUCTION

AREA CODE
TEL.: 258-
EXTENSION

November 15, 1968

Mr. William N. Ryan
Coordinator, ES'70
Breathitt County Board of Education
1140 Main Street
Jackson, Kentucky 41339

Dear Bill:

In response to your letter of November 1, please find attached a copy of your evaluation sheet you asked us to complete.

I am sorry I have not sent this in sooner. I assume Ron Atwood told you I was ill, in cervical traction and unable to get to the meeting at Eastern.

I hope that if there is any other way I can help, you will call me.

I would suggest that Jane Munson and Mitchell Spicer or J. P. Deaton might be appropriate for your writing team.

Please find inside my "Textbook Distribution Record". Note that four of the people have not returned their books.

Yours sincerely,

Harry

Harry V. Barnard, Chairman

HVB:jb
Enc. 2

INTRODUCTION TO BEHAVIORAL OBJECTIVES IN CURRICULUM DESIGN

Written evaluation and suggestions for change and/or improvement.

1. Pre-instructional arrangements and information to Breathitt County High School faculty. Was written information furnished, read, etc.? Yes

2. Design and scope of the in-service education course.
Appropriately limited – Well-designed.

3. Materials provided for use by ES'70 office. Adequate – Satisfactory for purposes used

4. Equipment and facility arrangements. Equipment satisfactory.
Room's acoustics very bad. Room stuffy –

5. First reaction of teachers (in first class).
Positive

6. Teacher attitude during course. Their attitude was positive – Wondered what the ultimate result would be –

7. Any change in teacher attitude during and at conclusion of class. What caused or contributed to this change?
Not really – It was positive to begin with

8. To what degree was the course successful in attaining its behavioral objective?
(Having been interested in the form and content of properly written behavioral objectives and provided ample opportunity to practice, the teachers will write terminal and/or intermediate behavioral objectives within their own discipline in the cognitive or psychomotor domain with 100% accuracy of form and content elements.)
ABOUT 6 OR 7 OF THE 8 WOULD HAVE MET OBJECT

9. Any and all comments of your own.

Well planned program –
Appropriately limited objective –
Teachers need better understanding
of overall objectives of ES '70 –

INTRODUCTION TO BEHAVIORAL OBJECTIVES IN CURRICULUM DESIGN

Evaluation and Suggestions

Leonard Burkett

Pre-Instructional Arrangements

The arrangements and information to the faculty seemed to be adequate insofar as I could determine. Some of the material had been read but other material had been received too recently because it was new material. I believe everything was done that could be within the time allotted.

Design and Scope of In-service Education Course

The design of the course was very appropriate for the purpose. The only drawback I might see here would be that there was such a profusion of material it was difficult to determine what to omit. This might possibly have led to different points (which is not necessarily unhealthy).

Materials Provided

Materials provided were adequate and I might add that everyone was very helpful in this respect.

Equipment and Facility Arrangements

Here agains, everything was very satisfactory and everyone was very helpful in setting up.

First Reaction of Teachers (in first class)

I might describe the first reaction of the teachers as anxious and inquisitive. The massive scope of the program seemed to have had them overwhelmed and they could not see a starting point. However, everyone seemed to be willing and even anxious to get into the subject and find out more about it.

Teacher Attitude During Course

The attitude of the entire class was positive during the course. Everyone was jovial and seemed to get a great deal of enjoyment from the presentations and discussions. They cooperated well in doing suggested activities.

8

Change In Teacher Attitudes

The most change noticed was the change in attitude toward the benefit of behavioral objectives. The class began to see where objectives of this type could be used in units of instruction and began to talk about them in more real terms.

Success in Attaining Behavioral Objective

The teachers were able to write correct behavioral objectives in both cognitive and psychomator domains. The objectives contained all the specified characteristics as set forth in the course of study.

Comments

The last assignment made to the group with which I worked was to write behavioral objectives for a small unit of study. The objectives were complete as far as containing all the specified characteristics was concerned. However, they were somewhat rambling and contained some unecessary statements. More practice will be needed in order for them to be able to think in more strict terms and get the objectives in concise form.

As a final note, I might say that I commend the group with which I worked. From the point of hardly knowing what was meant when behavioral objective was named, they progressed to being able to write technically correct behavioral objectives. Some of these objectives were tried in the classroom and evaluated.

MOREHEAD, KENTUCKY 40351

SCHOOL OF SCIENCES
AND MATHEMATICS

Mr. William Ryan
Assist. Supt. of Schools
ES 70
Breathitt County Bd. of Ed.
Jackson, Kentucky

2/10/70

Dear Bill;

Your recent letter indicated a prompt reply. I will list my involvement in a somewhat tabular form.

Inter-university staff orientation and instruction, three meetings during the fall of 1968-69.

Inservice orientation for Breathitt County teachers, five of seven meetings. Emphasis during the inservice sessions was on recognizing and writing Behavioral Objectives.

One evaluation meeting with the inter-university staff at the end of first reporting period for school year 1969-70. This session was used to observe the General Science ES 70 Classroom. There was ample evidence that the philosophy and guide lines of ES 70 were being followed. Reasonable progress was being made toward meeting the need of the individual student.

Sincerely yours,

Crayton Jackson

Evaluation of the Introduction to Behavorial Objectives in Curriculum Design

Suggestions for Change and/or Improvement

by Crayton Jackson, Professor Science Education

1. The pre-instructional arrangements and information to the Science and Mathematics for Breathitt High School Faculty seems to have been satisfactory. There were numerous example through comments by the high school teachers that they had been informed of the nature of the project. There were also indications that the teachers were some-what hazy about the over-all aspect of ES 70 and the particular role that the Breathitt County School System had in the totla ES 70 Program. The materials that had been furnished were studied by most of the group.

2. The in-service course accomplished the objective as stated and understood by the teacher and instructor. Each teacher achieved the general Behavorial Objectives by being able to recognize and write acceptable Behavorial Objectives.

3. The materials supplied by the ES 70 office were ample. They were provided in quantities sufficient for both teachers and staff.

4. Equipment and facility arrangements were very good. There were no occasion in which the in-service program was limited because of lack of facilities and equipment.

5. The reaction of the teachers during the first session was typical. They were, without exception, sincerely interested and somewhat overawed by the part that Breathitt County was to have in developing the Program.

6. Each teacher showed constant gain into the techiques of stating Behavorial Objectives. During the second session one teacher was very critical of a test she had designed for a class. Each in-service participant contributed to the groups through self-criticism and constructive suggestions.

There was an initial feeling of inferiority for a task of this magnitude. During the course of the initial training period there was a decided improvement in self-confidence among the group.

7. There were definite changes in attitudes during the cours. Underst nding the nature and signifance of behaviorally stated objectives produced confidence in their ability to contribute to the program. The actual try-outs in the classroom and reports to the group changed their attitude toward teaching, especially toward the student who are not rapid-learners.

One of the limiting factors that the high school teacher identified was the lack of equipment and materials in the science and mathematics classrooms. They became frustrated because acceptable Behavorial Objective could not be developed with only the text-book.

However, this did not produce a feeling that the theory of Behavorial Objectives were beyond achievement even with limited materials.

8. I am convinced that each participant involved in the initial in-service sessions gained the basic concept inherent in behaviorially stated objectives. They exhibited behavories that indicated an aggressive desire to continue in-depth study of the most recent innovations at the high school level. I doubt if each participant achieved 100% accuracy in writing terminal or intermediate behavorial objectives in the cognitive and psychomotor domain because of the limited amount of time during the training period and the materials the teachers had in their classrooms.

9. I appreciate the opportunity to have been involved in the initial stage of a program that has the potential of revolurionizing the educational offerings to high school age children of Eastern Kentucky.

In many ways, I think the involvement of university staff in a cooperative project of this nature provides the avenue of communication that will produce rapid advancements at the university level, especially the areas concerned with teacher education.

EASTERN KENTUCKY UNIVERSITY
Richmond, Kentucky 40475

COLLEGE OF ARTS AND SCIENCES
Department of English

November 12, 1968

Evaluation of In-service Education Course
for
Breathitt County English Teachers

1. Pre-instructional arrangements of written information, materials, meeting rooms, and equipment were aptly handled by the ES'70 Office.

   I felt that most of the ten members of my group had perused the material and were ready to discuss the writing of behavioral objectives.

2. The purpose of the in-service course was to study the writing of behavioral objectives and to be able to write with 100% accuracy in form and content terminal and intermediate behavioral objectives in both the cognitive and the affective domain in the discipline of English. We studied Mager, The Washington-Bellvue paper, and various exerpts from other writers. The English people rewrote some prepared objectives, stating them behaviorally. They also wrote behavioral objectives for the lessons from units which they were already teaching.

3. Copies of Magor's book, Preparing Instructional Objectives and exerpts from other writers were furnished for each member of the group. We also had access to Bloom's Taxonomy and other books. Necessary equipment: filmstrip projector, tape recorder and tapes, screen, the Vimcet and answer sheets were furnished. Either Mr. Lawson or Mr. Ryan was available at every meeting.

4. These were handled by the ES'70 Office. My room was ideal for our purpose. Lighting was very good; room had dark shades; and seating was properly arranged for study, viewing, and discussion.

5. The teachers were very enthusiastic; however, two of them doubted that behavioral objectives could be written for all phases of English. Study of some vaguely stated objectives and practice in rewriting them proved helpful in dispelling this doubt.

6. and 7. Teacher attitude was good throughout the course. As we progressed, read the behavioral objectives they had written, and planned to use them in the classrooms, the excitement of achievement seemed to engender a desire to

continue to learn and to write nothing but behavioral objectives in their lesson plans. After using behavioral objectives in their daily teaching, the teachers reported that they were amazed at the differences in student attitude and performance.

8. I feel that the course was successful; however, we plan one more meeting after I return from The National Council of Teachers of English in Milwaukee, Wisconsin. At that meeting I hope to talk with and obtain materials from other teachers of English who are participating in the writing of behavioral objectives for English in some of the ES'70 schools.

Sincerely,

Geneva W. Owens

Geneva W. Owens, Assistant
Professor of English and
Education

GWO:lct

EASTERN KENTUCKY UNIVERSITY
Richmond, Kentucky 40475

COLLEGE OF ARTS AND SCIENCES
Department of Chemistry

November 18, 1968

Mr. William H. Ryan
Coordinator, ES'70
Breathitt County Board of Education
1110 Main Street
Jackson, Kentucky 41339

Dear Bill,

Sorry about the delay on the evaluation of the inservice course. I thought I had already sent it in last Monday. Apparently, I misplaced it, but it is enclosed.

Sincerely,

Morris

Morris D. Taylor
Associate Professor

MDT:cah

16

Introduction to Behavioral Objectives in Curriculum Design
Evaluation

1. The arrangements for the inservice course were satisfactory. The materials were readily available for the participants, and for the most part, these materials were read in advance of our meetings.

2. The design and scope of the course was arbitrary, but adequate for an introduction to behavioral objectives. Most of the teachers in our group interacted well with the instructors and the instructional materials.

3. Satisfactory.

4. Satisfactory.

5. The first reaction of the teachers was one of cautious skepticism. They did not fully understand what their role was to be. In fact, they did not understand the ES-70 program very well. Whether they understand it yet is doubtful.

6. I think the teacher attitude was good, and the participants and the instructors was very satisfactory. The teachers gave it a "good try" for the introductory session. Some of them did not prepare very well, but I suspect that they had much on their minds. Coupled with their lack of understanding of the overall objective, their reaction was understandable. These "people" were not chosen for the writing team.

7. Three of the teachers really "caught on" toward the end of the course and showed promise. These were proposed for the writing team. The others really didn't work at it very hard - although they appeared interested in what we were trying to do. They probably did not get enough opportunity to write behavioral objectives in their own discipline.

8. The teachers were able to identify well-written behavioral objectives with good accuracy at the last meeting. There was not opportunity to deal with behavioral objectives in the cognitive domain and there was little opportunity to deal concretely with objectives in the psychomotor domain for their own disciplines. However, these objectives really were not included in the first three tasks in the W-B materials. I was most pleased with the progress made.

9. There needs to be more information disseminated to all of the teachers as we continue the inservice course to keep them informed at all times of our progress.

I would suggest some kind of accounting procedures where the teachers receive their remuneration for the time they put in. Their morale is going to be an important factor in the success of the program. Released time may be an important factor if it can be arranged for the teachers.

Exhibit III

UNIVERSITY OF LOUISVILLE
LOUISVILLE, KENTUCKY 40208

SCHOOL OF EDUCATION
SECONDARY CURRICULUM AND TEACHING UNIT

BELKNAP CAM

February 9, 1970

TO: Mr. William Ryan, ES-70 Coordinator
Breathitt County Board of Education
Jackson, Kentucky 41339

FROM: Jack Morgan, Consultant
to Breathitt County ESEA Title Project III

SUBJECT: Consultant Report

The specific function as consultant to Breathitt County is to evaluate the Title III grant for individualizing the science curriculum. Since additional data is to be collected near the end of the academic year, this must be considered an interim report. Upon obtaining the post-test data, a complete report of the project evaluation will be prepared.

1. Breathitt County Schools are participating in ES-70, a national research and development project. I was associated with this project during the year that I was an Office of Education Fellow, working in the United States Office of Education's Bureau of Research. Because of this experience, I attended one of their in-service day meetings for Breathitt County Teachers at the beginning of the 1969-70 academic year. The purpose was to give the background and objectives of the ES'70 project and indicate how the ESEA Title III project was an integral part of the overall systems design. During this meeting teachers asked several questions about the project and, I believe, had a fuller understanding of the role of Breathitt County in developing an outstanding science program by means of its ESEA Title III grant.

2. In August 1969, I attended, with Mr. William Ryan, a meeting with Kentucky Department of Education employees. Again, the purpose of this meeting was to explain ES'70 and its relationship to the improvement of the science curriculum with the assistance of the Title III grant.

3. Early in the academic year I administered pre-tests to the students participating in the individualized science program. Instruments used included Form A of the General Science Test prepared by Educational Testing Service and Form YM of the Watson-Glaser Critical Thinking Appraisal prepared by Harcourt, Brace and World, Inc. I will administer equivalent forms of these same instruments near the end of the 1969-70 academic year. The pre-tests have already been scored. Upon obtaining data from the post-tests, it will be possible to determine the extent

to which learning has been effected by this individualized science program. The results obtained will be carefully analyzed and an evaluation report containing analyzed data, subject observations, and general conclusions will be submitted to the Breathitt County Schools.

In addition to this more formal evaluation procedure, I have participated in the following activities: Attended a briefing seminar held by Mr. Ryan for all university consultants associated with this project. This meeting helped us to understand specific goals and problems for Breathitt County. It also had implications for the type of teacher education programs that are at our respected universities. As a result of a better understanding of the kinds of teachers needed for this and other innovative programs, suggested changes in teacher education come closer to being realized.

I have also observed each class in the individualized science program, talked with many students about the program, and then talked with faculty and staff of the Breathitt County Schools about the students' perceptions of their participation.

Breathitt County High School
Analysis of Data from the
General Science Achievement Test—Freshmen

Upon looking at the data for the General Science Achievement Test administered to Breathitt County freshmen no statistically significant difference was found when comparing the pretest with the posttest. A standard $\tilde{z}$ score was found. The $\tilde{z}$ value was .885, using converted scores. The process of converting raw scores is explained on page 15 of the Cooperative Science Tests Handbook. A table suitable for making these conversions is found on page 32 of the same handbook. The handbook explains, ". . . raw scores on alternate forms of a test . . . have been equated statistically and converted to a common score scale so that scores on both forms of the test are comparable." (p. 15)

The data did suggest the following possibilities: (1) It might be loaded on intelligence; (2) There was the possibility of counteracting interaction effects as a function of levels of intelligence. The above and the fact that gain scores are relatively unreliable lead to consideration of alternative forms of analysis.

Analysis of covariance and blocking on the basis of I.Q. were considered. It was decided not to use analysis of covariance because of the possibility of interaction effect which might yield a nonlinear relationship between I.Q. and the test scores. Therefore, a two dimensional analysis of variance with one repeated measure was performed. The two dimensions were prepost performance (within subjects) and levels of I.Q. Converted scores were divided into twelve groups with ten subjects in each group. There were originally 151 students. Seventeen were lost by the absence of I.Q. data. The remaining 134 students were cast into thirteen groups. Group number thirteen was dropped. The n of the remaining was equalized (n=10) by randomly casting out subjects from those groups having an n greater than 10. Table 1 defines I.Q. ranges and number of subjects lost and retained in each group.

Table 1

I.Q. Groups	Original n	Final n	Subjects Dropped
118 - 132	10	10	
112 - 117	10	10	
109 - 111	10	10	
106 - 108	12	10	(2 randomly cast out)
101 - 105	10	10	
98 - 100	12	10	(2 randomly cast out)
96 - 97	10	10	
92 - 95	12	10	(2 randomly cast out)
87 - 91	10	10	
79 - 86	11	10	(1 randomly cast out)
74 - 78	10	10	
64 - 73	11	10	(1 randomly cast out)
52 - 63	6	0	(6 dropped)

Interpretation of Data

The data analysis summary is found in Table 2 below.

Table 2

Analysis of Variance Summary Table

Source of Variation	SS	df	MS	F
Between Students	12,188.3	119		
Levels of Intelligence	7,204.3	11	654.94	14.19**
Students within Groups	4,984.0	108	46.15	
Within Groups				
Pre-Post-Test	1,741.5	120		
I.Q.x Pre-Post-Test	105.3	1	105.3	7.54**
Between Tests x Students	128.3	11	11.66	.84
Within Groups	1,507.9	108	13.96	

**Significant at .01 level

There was no indication of any interaction effect. This implies that there were no floor or ceiling effects confounding the comparisons and that improved performance on posttest obtained at all levels of I.Q.

Both main effects were significant at well beyond the .01 level of significance. Therefore, it was concluded that performance on this test was influenced by intelligence. The significant main effect of the pre- posttest dimension reflects that performance on the posttest was superior to performance on the pretest. This contra-indicates the conclusion—based on the prior analysis of gain scores—that there was no difference.

It cannot be validly concluded that all of the improvement is attributable to the effects of the experimental program. Since alternative forms of the instrument were employed on pre and posttest, it seems highly unlikely that the improvement is attributable to practice effects. Another possible source of variance is associated with variance not in common between the two alternative forms, particularly since a prior (and invalid) analysis of raw score differences was significant. Still another possible source of variance related to improved performance would be a general effect of maturation and/or experience. The original design did not have the type of control needed to assess this. On the other hand, it seems reasonable to assume that if such effects obtained they would operate differentially across levels of intelligence.

The results of this analysis do warrant the conclusion that the study is worthy of replication and refinement. It is highly possible that the improvement reflected in these data is attributable to the experimental program. Any program that shows promise of being beneficial to students across a wide range of intelligence (particularly in a rural setting) is worthy of more intensive experimentation and study and a rigorous evaluation.

Jack Morgan
Univ. of Louisville
December 22, 1970

Exhibit IV

THE OHIO STATE UNIVERSITY
COLLEGE OF EDUCATION
1945 NORTH HIGH STREET
COLUMBUS, OHIO 43210

FACULTY OF SCIENCE AND
MATHEMATICS EDUCATION

(614) 293-4121

TO: Whom it may concern

FROM: Herbert L. Coon
Professor, Science Education
The Ohio State University

SUBJECT: Evaluation of E S 70 Ninth Grade Science Program
in the Breathitt County, Kentucky, Public School

DATE: July 20, 1970

I was invited by Mr. William N. Ryan, Coordinator of the E S 70 program in the Breathitt County Public School System to make an objective and independent evaluation of their curriculum development efforts in ninth grade general science. In making this evaluation I have examined carefully all materials prepared to date and have spent two days (July 13 - 14) in Breathitt County interviewing persons who have been and who are heavily involved in this program. Persons interviewed included Mr. Ryan; Mr. Robert S. Lawson, Curriculum Director; Mr. Malcom Frasure, science teacher and next year's team leader; Mrs. Nancy Joyce Combs, science teacher and writing team member; Mrs. Phyllis Williamson, business education teacher and writing team member; Mrs. Eva Jean Turner, mathematics teacher and writing team member; Mr. Ernest Shouse, humanities teacher and writing team member; Mr. Mitchell Smith, science teacher and writing team member. Discussions were also held with seven Breathitt County high school students who are currently working as "reactor-evaluators" in the curriculum materials development project -- Garnet Hounshell, Kathleen Gross, James Clemons, Leo Combs, Larry Johnson, Silas Hall, and Larry Noble.

Clearly the Breathitt County Schools have undertaken a very big task in attempting to develop a behaviorally oriented general science course. Not only are they undertaking it but they are willing to submit their ideas for immediate review and criticism. I remember with some amusement the principal of the John Adams High School in Portland, Oregon (another E S 70 school) saying that they really ought to have five years to develop their programs before being expected to submit them to critical review. I remember with no amusement that big corporations such as General Motors use three or more years of lead time to develop a new model of automobile which differs far less from its predecessors than does a creative curriculum project such as the one under review.

Few high school course offerings are more difficult to revise than ninth grade general science. For many students this course will decide their continuing interest or lack of interest in science. For many students this will be their final opportunity to learn something of the broad scope of science and how scientists work. Thus, the selection of material to be studied and the way it is to be studied become major concerns in a curriculum revision.

In my judgment the 11 Learning Experience Modules (LEM's) available for the 1970-71 school year will provide a broad and appropriate sampling of major science fields and processes. I doubt if any reader of this evaluation would object to his son or daughter learning something in general science about the following:

*History of Science	LEM 1
*Environmental Science	LEM 2
Mathematics and Measurement	LEM 3

Chemistry	LEM 4
Physics	LEM 5
Meteorology	LEM 6
Astronomy	LEM 7
Geology	LEM 8
Biology	LEM 9
Science in Everyday Life	LEM 10
*Oceanogrphy	LEM 11

(Asterisks designate LEM's developed this summer for the 1970-71 school year. All other LEM's are also being revised this summer.)

Obviously no student can learn very much about any of these subjects, yet equally obviously, the well educated person ought to know something about all of them. How can this dilemma be resolved?

The approach being tested in the Breathitt County Schools is to develop a reasonably small number of behavioral objectives in each area (or LEM) which all students should master. If these behaviors are interesting to students, if they are reasonable to accomplish, and if students "feel good" about their work toward the behavioral objectives, then it appears that the developing program is moving in the right direction.

When I studied the materials used in the LEM's this past year, I had very serious misgivings about their appropriateness for Breathitt County ninth grade students. The materials were often too abstract, too difficult, too far removed from the real world in which students and teachers live. (Of course, the same criticism could and should be directed toward most conventional textbooks.) When I reviewed my concerns with LEM writers, science teachers, and others during my evaluation visits I learned that they agreed with my criticism. Last year's experience convinced them that some of the LEM's were too difficult, too long, and often too "bookish". It is important to note that necessary revisions to eliminate these weaknesses are now moving along rapidly and with much promise for success because the teachers who developed the materials and used them want to change them.

Curriculum revisions "from the top down" have been notoriously unsuccessful. Despite millions of dollars spent in developing PSSC physics by experts at the national level, we now find fewer high school students studying physics. I feel very strongly that the only productive way to get teachers to change programs is to get them involved in planning and testing changes. It takes time for teachers (or anyone) to change long held beliefs, but it appears to me that the persons responsible for E S 70 ninth grade science program in Breathitt County are now approaching "the pay-off period". I sense an unusual willingness on their part to admit some mistakes were made but I sense an equal conviction that they have profited from these mistakes and they can now, with greater assurance and conviction than was possible before, develop a better behaviorally oriented science program for their boys and girls.

In talking with students, teachers, and administrators who had worked with the new science program last year, it became apparent quickly that some problems such as classroom space, heating, lighting, laboratory equipment, and science library resources were very upsetting to all persons involved. I sense that much was learned and corrected during the first year's operation which will be reflected in an improved physical setting and improved learning next year.

I am aware of the fact that the leadership of the E S 70 program in Breathitt County plans to develop behavioral objectives and appropriate learning resources for this type of instructional program for other subject matter areas such as English, mathematics, and business education. Since the writing teams for the science program were interdisciplinary and since many teachers in the high school have participated in an in-service program on developing and using behavioral objectives, it should not be too difficult to change the teaching-learning pattern in other fields in the years immediately ahead. It is exciting to dream of a total school where students can identify behavioral objectives which are important to them, where students can understand clearly what they need to do to master these objectives, where students can proceed to accomplish these objectives at their individual learning rates, and where many opportunities for in-depth learning will be available for interested and able students after they have completed the basic-core content of prescribed learning experiences. Breathitt County appears to be in a position to give some substance to this dream.

I got evidence that teachers and students with whom they work are making good progress in developing a growing list of behavioral objectives which make sense to and are accepted by the students as meaningful goals toward which to work. Nothing could be more important than this, since we have long known but ignored the fact the most common cause of low achievement and subsequent dropping out of school is an unwillingness of students to accept the vague and long term goals of education as they are pontificated by teachers and other adults. It is refreshing to learn that the LEM writers and others associated with the E S 70 project are making plans to get students involved more heavily in developing and evaluating behavioral objectives. Attempts will also be made to get students more involved in LEM evaluation and development. It appears to me that more parent reaction, evaluation, and involvement in the curriculum development effort will also be possible next year now that the basic LEM's have been improved and stabilized somewhat as a result of what was learned the first year. I would like very much to see more behavioral objectives developed which are couched in terms of specifics for the Breathitt County community or even specifically for the homes in which these students live. Such objectives can do much to bridge the traditional chasm between home and school.

It is presumed that during the 1970-71 school year all ninth grade science students will complete (master) the 11 LEM's which constitute the basic course of study by working as individuals or in small compatible groups and by working at or near their capacity. As the science teachers work with this basic program for all students, they plan to work as a team to test additional interesting ideas such as:

1) While holding to the concept of mastery of objectives won't it be possible for some students to complete the basic LEM's in about one-half year?
2) What type of in-depth studies are possible and will be undertaken after strong students complete the basic units?
3) What will be the advantages of permitting students to select the order in which they choose to study the basic LEM's? (I support this idea and sense many values in it.)

4) What will be the interest of some able students in serving as aides after they have finished the basic program?

5) What types of behavioral objectives in science can be geared closely to the lives of students and their parents?

Educational experimentation is a rare process designed to produce an even rarer product--significant educational improvement. Since the process is underway in the Breathitt County schools and since the product (results) are very promising, it doesn't, in my judgment, seem sensible to stop before full value can be received. If the project is continued it appears quite likely that this high school in the unpromising hill country of Eastern Kentucky can and will make a significant contribution toward improving general science programs in Kentucky and elsewhere.

BIOGRAPHICAL DATA -- DR. HERBERT L. COON

Professor
College of Education
The Ohio State University
July, 1970

Education

A.B.	1935	Bluffton College (Ohio)	Major in Chemistry
M.A.	1938	Ohio State University	Major in Health and Physical Education
Ph.D.	1951	Ohio State University	Majors in Secondary Education and Teacher Education

Teaching, Administration, and Consulting Experiences

In Ohio public schools	1936-1942
Teaching in University School of The Ohio State University	1944-1951
Administrative assignments in University School associated with curriculum development, research, and teacher education	1951-1967
Professor - Department of Teacher Education	1968-1969
Professor - Faculty of Science and Mathematics Education	1969-
Summer visiting lecturer assignments in curriculum at Michigan State University and University of Louisville	1949-1954
Educational consultant to Department of Education Territory of Guam	1959
Technical Consultant in secondary and teacher education to National Council of Educational Research and Training, Ministry of Education, Government of India, New Delhi	1963-1965
Evaluator of Title I ESEA Projects submitted to Ohio Department of Education	1965-1966
Regular involvement with in-service education projects and school surveys in many Ohio public school systems	1951-1968

Curriculum consultant to Title V study of elementary, secondary, and vocational education in Minnesota — 1967-1968

Other professional activities

Frequent program responsibilities in groups such as ASCD in regard to high school programs and teaching

O.S.U. representative on collaborative projects with the Cleveland and Columbus Ohio public schools to improve the program and teaching for disadvantages learners

Publications

A Handbook for University School Parents, Ohio State University Press, 1954

"Parent Handbook Answers Typical Questions." Nation's Schools, February, 1955

"Expressed Standards of Behavior of High School Students, Teachers, and Parents." The Personnel and Guidance Journal, January, 1956

"Unused Facilities for School Camping." Ohio Schools, February, 1958

"Why Resource Units?" Educational Leadership, March, 1959

Co-author of a chapter, Programs for the Gifted -- A Case Study, in the 1959 Yearbook of the John Dewey Society

Seminars for the Gifted in Ohio High Schools, Ohio Department of Education, 1962

Exhibit V

REPORT OF ON-SITE VISITATION AND REVIEW OF THE ES-70 PROJECT

by

Edwin B. Kurtz, Jr.
Professor and Chairman
Department of Biology
Kansas State Teachers College
Emporia, Kansas

On July 21 and 22, 1970, I visited the staff and facilities of the ES-70 project in Breathitt County, Kentucky. Mr. William Ryan, Director of ES-70, sent me prior to my visit a complete set of the printed materials that had been used in the classroom during the academic year, 1969-70. During my visit to Jackson I met and discussed the project separately with Mr. Ryan, Mr. Robert Lawson, and the staff of teachers writing materials for the coming year and revising last year's materials. This staff included the teacher who was most involved with the instruction during 1969-70. I also visited the high school science room in which ES-70 instruction occurred last year, and I visited the related junior high and elementary school facilities.

The following statements result from this brief visit to Jackson and from my review of the printed materials. I would like to point out that, although I had not previously visited Jackson or Breathitt County, I have visited on several occasions the public schools of eastern Kentucky. During a two-year period as part of a National Science Foundation project for elementary school science, I visited and worked with teachers in Paintsville, Morehead, Prestonsburg, Martin, Wayland, Pikeville, and Salyersville. I have been in the schools of these cities and have worked with the teachers and children. Hence I believe I can review the ES-70 materials with a somewhat broader base than if I had not been previously in a geographically and socio-economically similar area.

1. The behaviorally based and individualized instruction of the ES-70 project is in keeping with the national trend. There is no doubt in my mind that instructic based on behavioral objectives will typify curriculum change in the 1970's. From my experience with faculties of numerous public schools, universities, colleges, and community colleges, and from a survey of the current literature, behaviorally based instruction is becoming the accepted and desired form of instruction, yet i schools have implemented such change but many are rapidly moving in that directic

The State of Kentucky and the Department of Public Instruction should look with pride at the accomplishments made in Kentucky in this direction, not the least of which is the ES-70 project. I know of some large high schools in reasonably affluent areas, such as McCleur High School outside St. Louis, Mo., and Sahuaro High School in Tucson, Arizona that have embarked on a program of integrated science very similar to the ES-70 program, but I know of no schools, other than in Breathitt County, whose students come from low socio-economic families that have changed to a behaviorally-based system of instruction. The ES-70 project is, therefore, a pioneering effort that should be carefully nurtured and assisted. Undoubtedly other school systems in similar situations will look to Kentucky and Breathitt County for the materials and experience as they embark on similar instructional programs.

2. The science content in the activities and instruction of the ES-70 program is considerable and appropriate to the grade levels. In my opinion there is much science in the ES-70 materials as used in 1969-70. The units on measurement, scientific method, weather, use of the microscope and others are appropriate for high school students. Indeed, it is most encouraging to see the teachers of Breathitt County include the materials on measurement, inferences, and observation in the instruction. I have found here in Kansas that fewer than 10 percent of the freshmen can measure the length, mass (weight), and volume of an irregular object such as a fish. This is deplorable, yet the materials from Breathitt County should do much to remedy this inadequacy in their area. Also, I have found that fewer than 25 percent of the entering freshmen here at Kansas State Teachers College can calculate the percentage of something even when given the formula for percentag I believe the materials developed by ES-70 are working to remedy this lack of competencies in their students. As students come to the high school who have been in the AAAS elementary school science program which has been initiated in Breathitt County, obvious revisions of the materials will be necessary. But until that time it is good to know that these simple science competencies are included in the instruction developed under ES-70.

3. Many of the objectives in science that are in the ES-70 project are also included in national curricula. It is important to note that much of the science that the teachers of Breathitt County have included in the ES-70 materials is found in some of the national curricula, including the AAAS Science- A Process Approach (K to grade 6), the ISCS project from Florida State University (for grades 7,8, and 9), and the COPES project from New York University (for high school students). These programs are of national scope and reflect the thinking of scientists, educators, teachers, and school administrators.

Probably the most interesting development is that authors of recently published commercial science texts have also begun to move in the direction that the ES-70 program has taken.

One major criticism I have with the ES-70 materials is that there is too much science content, especially in view of the large number of non-college bound students in the school population. More emphasis should be placed, in my opinion, on the competencies needed for making intelligent decisions. Thus the science classroom would be used to change decision-making behavior rather than teaching the many facts of science. Regardless of my opinion, there is, indeed much science in the ES-70 materials.

4. The problems, frustrations, noise, and concerns of the teachers and students are normal for a highly innovative project, especially during the first year of tryout. In my interviews with the teachers it was apparent that the freedom in the classroom, which is both desired and necessary for individualized instruction, was quite new to both teachers and students. This is similar to experiences of other schools that have embarked on instruction similar to the ES-70 program, including my own department here in Kansas. An entirely new instructional environment is part of the ES-70 program, and this is bound to cause some anxieties and verbalized concerns. Yet in my interviews I did not receive any comments that the program should be discontinued because of these problems. Indeed, the enthusiasm and dedication with which the teachers were working on next year's materials told me that the program was a success in their minds and that they were pleased to be a part of it.

5. The reading level can be adjusted downward as needed. Subsequent revisions of the materials will improve the reading level. Indeed, audio tapes of the units may be needed for some of the very slow or low level readers. But the ultimate suitability of the writing must be indicated by the acquisition of the stated behaviors by the students. The results from 1969-70 indicate that most students were able to acquire the specified behaviors, thus suggesting that the reading level must not be too difficult for most. Based on results obtained from the Florida State University project for junior high school students, it may even be predicted that the behaviorally structured and individualized instruction of the ES-70 program may be improving the reading level of the students. Improvement by two grade levels has been obtained in some cases

in the ISCS science program from Florida State. It would be worth investigating this aspect of the ES-70 program, for it would be a most worthy fringe benefit of the science program, something few conventional science programs can even purport to have accomplished.

6. The amount of use of science matwrials (non-reading) could be increased. My major criticism, inaddition to the one referred to earlier, is that "hands-on" activities involving real objects are not utilized in the ES-70 materials as much as might be desired. I asked the teacher-writers about this and they stated:

A. Hands-on activities were included in the materials whenever equipment was already available;

B. Insufficient funds for the purchase of new equipment prevented the inclusion of other activities that were suitable; and

C. The attitude of much of the student population is such that many hands-on activities cannot be implemented in the classroom.

I accepted reasons A and B but urged the teachers and Mr. Lawson to reconsider their statement C. More non-reading activities, wouldI believe, do much to enhance the fun of science and subsequent learning. If the objects can be relevant to the student's environment and interests, then science will take on a much more real picture in the students' minds. Mr. Lawson agreed with this suggestion and indicated that he would do everything possible to see that more hands-on activities are included in the new materials and the revised materials. Several suggestions as to how to do this were provided and we discussed this at some length.

7. ES-70 has a behavioral basis but some objectives and assessment items need revision and improved clarity. In the materials I reviewed there was not always one-to-one-to-one correspondence among the objectives, instructional activities, and assessment items for the objectives. An excellent beginning has been made by the staff and teachers, but future revision should include a close look at this aspect of the written materials.

8. Is continuation of ES-70 recommended? The State of Kentucky should be commended for thier innovative and initially successful science program at the

high school level in Breathitt County. This is leadership at the State level that should be a model for other states to follow. The ES-70 project is not only innovative in comparison to national curriculum trends, but it is being carried out at a minimum cost by local talent, the teachers and staff of Breathitt County. Although financial help is essential to the future of ES-70, the success of the first year and the large production of materials by local teachers exemplifies what a school district can do when support at the State level is provided. I heartily recommend continuation of the program. With improved objectives and assessment items, precise objective evaluation of the program should be possible. This would permit assessment of behavioral changes in the students in a variety of ways with a view toward implementation of similar programs in other school districts.

August 3, 1970 Edwin B. Kurtz

kansas state teachers college
1200 COMMERCIAL STREET
EMPORIA, KANSAS 66801
TELEPHONE 316 343-1200

November 24, 1970

Mr. William N. Ryan
Director, ES '70
Breathitt County Board of Education
1140 Main Street
Jackson, Kentucky 41339

Dear Bill:

The general science materials you sent have been reviewed and compared to last year's materials. In many ways there are improvements, especially the objectives which are much clearer and more related to the instructional activities and test items. The coverage of topics certainly is broad and hits on relevant topics in terms of scientific literacy for the layman. Even the future college student will find these topics of assistance. No topic is treated in depth, of course, but that was not the intent as I understand the purpose of the course. There is considerable use of mathematics in the materials and this is good, but it may cause difficult hurdles for many students. The self-pacing aspect of ES '70 will help minimize these learning difficulties.

Having visited your facilities, I am aware of the severe apparatus and equipment limitations you have in the classroom. I am also aware of the difficulties associated with allowing each student free use of apparatus as he conducts the instructional activities, especially since so many of Breathitt County's students have not had many classroom opportunities to handle and use apparatus. This problem was expressed to me by several of the teachers involved in preparing the written materials and I can sympathize with them. The teacher-writers are to be commended for inclusion of as many hands-on activities as are in the materials now. Nevertheless, I would urge you to exert a strong influence in future editions of the materials to get more involvement of students in hands-on activities prior to textbook reading assignments. In this way the student observes and thinks first, then reads about what others believe and have written on the topic. Students from Breathitt County eventually must be able to work with materials and equipment with confidence, care, and with a minimum of supervision.

All Americans need these experiences in our technological society, and Breathitt County students must not be an exception if they are to bridge the cultural gaps now existing. This will require financial support for classroom apparatus and physical materials, but most of the things you need are inexpensive items; you just need lots of them. Again, as Director of ES '70, I urge you to move as rapidly as possible in this direction.

Hands-on science activities could be the means by which much of the experimental lag in Breathitt County students can be overcome.

Thanks again for the opportunity to review the materials. Your team has made a great start and I wish you every success in future developments.

Sincerely yours,

Edwin B. Kurtz, Chairman
Department of Biology

EBK:jk

BIOGRAPHICAL DATA -- Dr. Edwin Kurtz

Department Chairman
Kansas State Teachers Coll
Emporia, Kansas
August, 1970

Education

B.S.	1948	University of Arizona	Botany	Minor in Chemistry
M.S.	1949	University of Arizona	Botany	
Ph.D.	1952	California Institute of Technology	Plant Physiology (major) Bio-Organic Chemistry (minor)	

Educational Experience

Member, National Research Council, Atomic Energy Commission, Pre-doctoral fellow 1949-1951. Assistant professor-associate professor and professor at Univers of Arizona 1951-1968, Department of Biological Sciences. Professor and chairman of Kansas State Teachers College 1968-present, Department of Biology.

Other Affiliations and Activities

Assistant Director of Science Education-American Associate for the Advancement of Science, Washington, D. C. 1964-1967. Member of Phi Beta Kappa, Phi Kappa Phi, Sigma Phi and others. Contributor to approximately 70 scientific publications and articles on education, including 2 laboratory manuals on plant physiology; a book on Plant Science for Elementary School Children, and 2 texts for college biology classe Consultant for the past 2 years to the University of Nebraska, Oklahoma State Univer Kansas City-Kansas State Community College, State University of Iowa, University Maryland, Southern Regional Association of Agricultural Colleges, University of Arizona, University of Colorado and numerous public schools. Principal speaker at the AEGS-NFGA-National meeting at Dallas 1968. Title of talk-Do We Know Where We Are Going?

Current Interest

Mainly concerned with helping schools, particularly institutions of higher education, to develop innovative instruction based on behavioral objectives, currently developed in six courses in Kansas State Teachers College which are based on behavioral objectives. Last year over 2000 students in these biology courses were instructed individually.

Auspices and Honors

Formerly President of Arizona Academy of Sciences, Science Seminar; speaker for two years at the NFGA Annual Meeting; Fellow, American Association for the Advan ment of Sciences.

Exhibit VI

NORTHERN ILLINOIS UNIVERSITY
DEKALB, ILLINOIS 60115

Department of
SECONDARY
PROFESSIONAL
EDUCATION

Area Code 815
Telephone 753-1610

TO: Breathitt County Board of Education
FROM: Gerald D. Baughman
DATE: July 24, 1970

The following pages are directed toward an assessment of the charges made against the Breathitt County Board of Education science program referred to in a May 12, 1970 document from the Kentucky State Department of Education.

Before any comments can be made and understood by the readers, it is necessary to make clear my background so that an accurate perspective can be developed. First of all, I am rightly identifie with a group of persons associated with engineering accountability for results into public education. This means that accountability is the product of a process. With this frame of reference, at its most basic level, accountability means that an agent, public or private, entering into a contractual agreement to perform a service, will be held answerable for performing according to agreed upon terms, within an established time period and with a stipulated use of resources and performance standards. This requires that the parties to the contract keep clear and complete records and that this information be available for outside review.

With this preliminary orientation, I must candidly report that I have found no evidence to support the majority of the "verified" concerns and deficiencies related to the ES-70 science project.

The materials developed thus far by the project have been reviewed. The materials are at a more difficult reading level than the previously established level of student performance. This means there is only one way for students to go --- up. The results strike the same cord, the thrust is upward in improvement despite the difficult reading level. Locally available material does not support the contention that the materials require an excessive amount of time for the students to complete. Although the materials give a workbookish appearance, they are part of a plan of progress that permits students to meet previously prepared behaviorally stated objectives. If a screening device were employed that made use of behaviorally stated objectives in a comprehensive science program at the ninth grade level, it would be impossible to find a better quality and finer articulated set of materials available on the commercial market. The State Department judgment is completely without foundation.

The matter of student attitudes being negative could not be supported with the available local evidence. The statistical information gathered by the Breathitt County staff is definitely counter to the unsupported statement of the Kentucky State Department of Education.

A visitation with the writing team and teachers does not give the impression that ES-70 progress ranges from frustration and negative attitudes to that of having no reaction for the project. As a matter of fact, the reactions were the opposite. Only one person might be considered as having little reaction --- and that reaction was not found to be negative. All other persons demonstrated a healthy attitude and one that generates enthusiasm.

The contradictory nature of the comments about instruction and that little student work is being completed as contrasted with the comment that the materials require an excessive amount of time to complete demonstrates the State Departments lack of thoroughness in the "study." The differences between student directed and teacher led activities has not been captured by the Title III evaluators from the State Department of Education. The team evaluation technique coupled with the unsubstantiated and unavailable analysis of current results leaves me wondering about the depth of what is known about valid educational processes that were compared to the Breathitt ES-70 project.

Point #1 on page 3 of the May 12th letter in question should have read that the Title III effort as operated by the Kentucky State

Department of Education does not seem to be educationally and operationally sound. This statement cannot be counteracted on the basis of available information requested of Mr. Ryan. According to the State Title III plan, the evaluation information contained in the original statement and its support data are rightfully expected to be a part of the available material from Breathitt County. I found no such material available upon my request.

Of major concern to me seems to be the lack of recognition for the previous effort and a job well done at the elementary level. The lack of support for the secondary level will cause untold damage at the elementary level. Support for the secondary project will reflect in increased support for the elementary program. We have overwhelming evidence to indicate these kind of reactions will result and that the most negative will be contain the greater initial impact.

Another major concern to me is the lack of knowledge as to where the ES-70 type curriculum development endeavor can lead. The behavioral objective activity is needed as a base in order to eventually develop inquiry oriented behavioral objectives. Research on inquiry indicates that the brain of the learner develops a greater capacity, etc., when a constant diet of problem solving/inquiry is maintained. When denied this problem solving, the brain reverts back to its previous state. Closely allied to this concern is the established pattern of reactions of people to what they think is true or to what they have been led to believe is true. Improvements of a significant nature have been uniformly recorded with persons exhibiting little ability when key persons believe that ability or potential exists. Since I found real concern that potential exists in the ES-70 program, a real danger is present if the program is not continued with full expectations. This is not an untruthful support, for in fact the ES-70 does contain great merit. From these points of view, it is my considered judgment that the evaluation team from the State has failed to make adequate use of available research data as well as to fulfill its obligations to the State of Kentucky in meeting Title III requirements.

Thus far, this report has been a very negative one, bordering on the notion that the Kentucky State Department of Education and the Title III staff are really in the business of effecting quality planned change. If the State's function is in fact that of a change agent, what are the major strategies for effecting quality planned change?

A partial answer to this may be derived from viewing seven major strategies as contained in Dr. P. L. Miller's dissertation.

Dr. Miller is an ESEA Title III Consultant with the Michigan Department of Education. The following principles relate to interpersonal activities that are recommended as being most likely to foster a successful change of process.

PRINCIPLE 1: The change agent should identify the characteristics and needs of the client system and make his plans to implement change accordingly.

(a) People will more readily accept innovations that they can understand and perceive as relevant.

(b) To introduce change effectively, it is necessary to know existing conditions.

(c) The change agent's objectives should reflect the client's needs and is usually involved in the identification of the client's needs.

PRINCIPLE 2: The change agent should seek, and play a major role in, the establishment of rapport and the building of mutual trust and respect between the client system and itself.

(a) Technicians have given too much emphasis to the technical aspects of their jobs and not enough to the human aspect. This has too often resulted in installations of great efficiency built only to be abandoned or never completely accepted by the local people.

(b) The change agent must win some degree of acceptance and confide for himself within the community, institution, or group where he will work. He must gain the support of the local people at least to the extent that they will talk with him freely and sincerely about the real conditions and interests of their lives. Such rapport is a must before any work that requires the voluntary consent or cooperation of the local people can begin.

(c) Possibly the most important ingredients in establishing this relationship are mutual respect, genuine empathy on the part of the consultant and trust on the part of the person seeking help.

PRINCIPLE 3: The change agent should view the change process as a mutual, collaborative, reciprocal undertaking between the client system and itself.

(a) A collaborative relationship between the change agent and the client system is an essential component of planned change. It must be a joint effort that involves mutual determination of goals --- a power distribution in which the client and change agent have an equal or almost equal opportunity to influence one another. The client must have or develop a real stake in the change effort.

(b) Planned change is defined as a deliberate and collaborative process involving change agent and client systems. These systems are brought together to solve a problem or more generally to plan and attain an improved state of functioning in the client system.

(c) To innovate effectively, there must be some genuine desire or need to change from that which already exists.

PRINCIPLE 4: The change agent should identify key leaders, formal and informal, in the client system, and work through them.

(a) Those who direct change in formal organizations should keep in mind that the formal properties of a system do not tell the whole story, recipients can and do organize in ways that enable them to resist pressures placed by formal authority. Therefore, it is imperative to have knowledge of both the formal and informal aspects of the target system.

(b) Change agents should concentrate their efforts upon opinion leaders in the early stages of the diffusion of an innovation.

(c) The time and energy of the change agent are scarce resources. By focusing his communication activities upon opinion leaders in a social system, he may increase the rate of diffusion. Essentially, the leader approach magnifies the change agents' efforts.

PRINCIPLE 5: The change agent should understand the communication-diffusion of innovations process and utilize a strategy in working with the client system.

(a) The change agent needs to have an understanding of the culture contact in general: how and why people of different cultures borrow ideas from one another.

(b) The change agent must know and use the differing strategies of management for the resolution of problems.

(c) The competencies of the change agent must include an understanding of the theories and methods of organization change.

PRINCIPLE 6: The change agent should seek continual self-improvement in performing its role.

(a) Every change agent should be interested in making an evaluation of his work.

(b) The change agent must study and overcome its own resistance to change.

(c) The change agent must come to terms with and evaluate itself.

PRINCIPLE 7: The change agent should teach the clients to be their own change agents, to understand the process of change, and to develop self-renewing behavior.

(a) The consultant must assist those who have asked him for help to become more aware of the process whereby intential and planned change is best achieved.

(b) The underlying strategy of every change agent should be the improvement of his clients' ability to seek information, define alternatives, evaluate these alternatives, and take action to adopt or reject new ideas.

(c) The end goal for any change agent is development of self-renewing behavior on the part of his clients. The change agent should seek to put himself "out of business" by developing the ability in his clients to be their own change agents.

Deliberate questions asked of Mr. Ryan designed to determine the extent to which the Kentucky Title III staff could be termed as effecting quality planned change was a fruitless endeavor.

As a final remark, it appears as if the Breathitt County Board of Education could utilize some source of increased funding to permit a greater vocational input into area school and adult education programs. The one main hope of the Breathitt County area seems to reside in preparing the students and young adults for jobs outside the valley that permit utilization of the stable factors of an unstable technological society. These factors are contained in the writings of the former Associate Commissioner of Elementary and Secondary Education, Dr. Leon M. Lessinger.

RESUME

GERALD D. BAUGHMAN
800 Russell Road
De Kalb, Illinois 60115
Telephone: 815-758-1705
Social Security: 563-40-5413

Place of Birth: Pomona, California

Date of Birth: September 10, 1922

Marital Status: Married, three children: boy-19, girl-17 and boy-11

Height: 6'1"   Weight: 165 lbs.

EDUCATION: B.A. Pomona College, 1947. Major: Mathematics & Science; Minor: Psychology.

Ph.D. Claremont Graduate School and University Center, 1967. Areas of Concentration: Historical Curriculum Development; Contemporary Curriculum Development; Learning Theory; and Research, Design and Evaluation.

TEACHING EXPERIENCE: High School, 11 years; County Schools Coordinator of Mathematics, Science, Research and Federal Project Development, 7 years; part time university instruction, 4 years; Northern Illinois University, 3 years.

OUTSIDE ACTIVITIES: Numerous consultations with business, industry and educational concerns; regularly invited to speak before local, state and national subject matter and educational organizations; demonstration teacher at K-University levels employing inquiry, discovery or heuristic reasoning techniques; survey teams; curriculum development teams; and accreditation teams.

PUBLICATIONS: 10 educational pamphlets; 8 texts or resource units; 22 magazine articles, tests and reviews.

PROFESSIONAL ORGANIZATIONS: Phi Delta Kappa (14 years), National Council of Teachers of Mathematics, National Science Teachers Association (Life Member), American Educational Research Association, Illinois Education Association, National Education Association, Illinois Association for Higher Education.

PROFESSIONAL CAPABILITIES: Educational Engineering Team member; PERT analysis; educational system analysis; performance and learning specification hierarchies based on an inquiry or heuristic reasoning structure; behavioral objective specification, both content and learning process structured; research, design and evaluation; curriculum development procedures and systems; programming techniques for permitting innovative and creative approaches demonstrated by learners.

SUMMARY: I am in complete agreement with the present educational engineering approach to finding solutions to our learning and cost problems in education. Having dedicated my life to the betterment of educational practices and the plight of the learner in the classroom, I look forward to the challenge of the educational problems of the 70's.

Exhibit VII

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

Mr. William Ryan
Project Director
1140 Main Street
Breathitt County, Kentucky 40508

Dear Mr. Ryan:

Here at last is the Office of Education Team Report on the visit to selected Title III projects in Kentucky, November 29-December 4, 1970.

The report, we trust, is as objective and factual as might be warranted by the relatively short visit and comprehensive missions undertaken by the team. Most of all, we hope that the team's conclusions and recommendations are just and fair and that they will prove to be constructive to you in your work.

You may note that we have not included the exhibits referred to in the report, since most of them are available in your State Department of Education or the Title III regional offices.

Again, the team members thank you and your staff members for your generous cooperation and many courtesies. They enjoyed the visits with the many friendly educators and pupils they met.

Sincerely yours,

Lee E. Wickline
Acting Director
Division of Plans and
Supplementary Centers

Enclosure

DRAFT
Dec. 10,

Report on Team Visit to Evaluate Selected Title III Projects and One Proposal in Kentucky
November 29-Dec. 4, 1970

1. Team Members: Arno Jewett, Chairman; Gene F. Engle; William J. Gruver; David Iwamoto (DPSC, BESE, USOE); and Martin McCullough (University of Georgia)

2. Mission

a. To examine operation and progress made during the two and one-half years of Title III, ESEA funding by OE of Project Number 27-69-0016-2, "Educational Systems for the Seventies" in Breathitt County, Jackson, Kentucky with a view to possible continuation of funding for the period January 1-June 30, 1971.

b. To discuss the objectives, history, and nature of "A Proposal for a Reading, Mathematics, and Affective Behavior Evaluation Project" submitted to USOE for funding under Title III (15%) ESEA, by the Eastern Kentucky Educational Development Corporation (Paintsville Board of Education) in cooperation with the Kentucky State Department of Education in August, 1970.

c. To determine criteria and procedures used by the Kentucky State Department of Education in evaluating Title III proposals for possible approval and/or rejection.

d. To observe and discuss operation of selected Title III projects operating in schools in eastern and southern regions of Kentucky.

Mission I

Breathitt County Board of Education
ES 70

I. Purposes of USOE-On-Site Visit

1. Validate evaluation data collected, summarized, and interpreted by the State on-site-evaluation team.
2. Validate evaluation data collected, summarized, and interpreted by the ES 70 staff.
3. Validate evaluation data collected, summarized, and interpreted by ES 70 consultants.
4. Observe ES 70 in operation in terms of stated objectives, process, and allocation of resources.
5. Assess progress made, particularly since July 1, 1970, in terms of stated objectives.
6. Recommend action for funding on the continuation proposal (Jan. 1-June 30, 1971) submitted by ES 70 staff.

II. Procedures used by USOE Team

1. Pre-arrangement of visit was made with Breathitt and cleared with State Education Agency November 9, 1970.

   (a) On Sunday afternoon from 3:00-5:30, Jewett, Engle, Gruver, and Iwamoto were given a detailed history of the Breathitt project by Mr. Muffit of the Kentucky State Department of Education as well as materials used in the project during FY 70 but not FY 71. Mr. Muffit agreed to provide the team with a paper describing criteria and procedures used for funding Title III projects in the State. His comments about the quality and value of the ES 70 project were extremely negative. He was not in favor of continuation funding.

   (b) No SEA representative was asked to be present during the on-site visit to ES 70 in Breathitt County.

2. Agenda for ES 70 Visit to Breathitt County.

   Nov. 30, 1970

   10:00-11:30

   (a) Team made courtesy call on Superintendent Eugene Sebastian and discussed project activities.

(b) Team discussed purposes of visit and agenda with Bill Ryan, Project Director, and Mr. Millard Tolliver, Principal of Breathitt County High School where ES 70 is being introduced.

1:30-4:30

(c) The team members interviewed Ryan and his bookkeeper assistant.

(d) Team interviewed ES 70 staff, including Sam Lawson, Ed Sebastian, (brother of Superintendent); M. H. Fraser, Coordinator of Instructional Staff; and 2 instructors and 3 paraprofessionals.

Tuesday December 1, 1970

8:30-12:00 noon

(e) McCullough continued validation of data with Ryan.

(f) Iwamoto examined LEM curriculum materials.

(g) Jewett, Engle, and Gruver interviewed ES 70 staff and students.

1:30-4:00

(h) McCullough and Iwamoto verified, analyzed, and interpreted test data. Telephoned consultant at University of Louisville (Dr. Morgan) requesting clarification of how Morgan arrived at his findings showing significant growth on standardized ETS science test.

(i) Iwamoto observed ES 70 in operation in the classroom. Gruver interviewed individual teachers and students (random selection).

(j) Team met with entire ES 70 instructional staff from 2:30-3:30 and discussed administrative and evaluation procedures and data processing activities.

(k) 2:30 Jewett and Engle left for Ashland, Kentucky, to assess Paintsville proposal.

Wednesday December 2, 1970

8:30-12:00

(l) McCullough made final collection and validation of evaluation data.

(m) Iwamoto gave an attitudinal test to a sample of 150 students participating in ES 70.

(n) Bill Gruver interviewed non-ES 70 staff and students.

1:00-3:00

(o) Recapped outcomes of on-site evaluation with Ryan.

(p) Discussed visit with school superintendent and said good-bye.

4:00 Iwamoto and Gruver left Breathitt for Somerset; McCullough returned to University of Georgia.

III. Findings

1. General Program Description

This district is a member of the original, 19-district network (17 states) of ES 70 projects with objectives to design, refine, implement, publish, and disseminate secondary curriculum. Reports from specialists in OE (Dr. Sue Brett and Lenora Smith) as well as Ryan suggest that the ES 70 network is falling apart and is no longer a viable system.

The objectives - 10 in all - are on pages 2-5, Exhibit #1 Application for Continuation. In summary, they are: (1) complete the rewriting and implementation of the 9th grade general and physical science curriculum (begun in FY 70); (2) design, develop, write, publish, and implement the 10th grade Biology curriculum begun in FY 70; (3) test revised curriculum design in other discipline areas; (4) implement selected blocks of Behavioral Objectives in English 9-12 as developed and produced by the Tri-University Project; (5) complete study of CEMREL math program for adaptation/adoption; (6) cooperate in the development of the arts curriculum projects; (7) continue accumulation of information in student Data Bank; (8) continue dissemination and coordination with ES 70 network; (9) continue the development of educational specification for a new secondary facility; and (10) continue consultative services to the Tri-University project "Behavioral Objectives in English, 9-12."

2. Geographic Area

ES 70 aims ultimately to serve the students and faculty of Breathitt County. Today it is serving about 300 selected students and 3 faculty and 3 aides of Breathitt High School in Jackson, Kentucky.

3. Administration

The project is administered by the Director from an office one block from the school grounds in Jackson. The curriculum writers and the instructional staff work and teach in the Breathitt County High School. The project director is responsible to the Superintendent of Schools, who commented favorably on the project operations and the concurrent reduction of the dropout rate.

4. Cost of Project

About $40,000 was available for the period July 1-Dec. 31, 1970, for staff, production, and substantial revision of material after FY 70 payment for part-time curriculum writers, consultants, office expenses, and for travel. As of December 4, the project had reportedly expended $21,000 of the grant and had an unexpended balance of $19,000. Nearly $4,000 had been expended for travel in FY 70 and $500 in the first 5 months of FY 71.

5. Operations

The project has changed considerably in staffing and curriculum development since FY 70, as indicated below:

(a) Last year the general science program (the only active implementation of developed curriculum) included a nongraded group of 9-12 graders in 6 classes of over 90 pupils each. This year it includes only the 9th graders in 5 classes of about 60 pupils each.

(b) The number of teaching staff members (3 professionals and 3 paraprofessionals) did not change. However, only one of the original professional teachers is still on the ES 70 staff. Reports by teachers and pupils indicated the two new teachers are much more effective than the ones they replaced.

(c) The project is using 8 curriculum writers who are revising the 1969-70 curriculum after school or on the week-ends.

(d) Many instructional materials have been revised because they were too difficult or ineffective. The science curriculum (called LEM Learning Experience Module) now consists of a core book used by all 9th grade science students, plus a set of Special Education LEMs for slower students and in-depth LEMs for rapid learners.

(e) The LEM includes objectives, sketches, and programmed exercises including additional laboratory work.

(f) Students work individually or in small groups. A variety of LEMs are utilized at the same time, as well as many supplementary study materials readily accessible in the learning laboratory or classroom.

(g) When a pupil has completed a LEM, he is interviewed by an instructor and, if found ready, takes a test for the LEM. This process minimizes failure.

(h) Pupils work independently, in small groups, and are helped on an individual basis by aides and teachers.

(For further detail of this operation see exhibit #2, and #3.)

(i) Most of the LEMs were a part of or related to the science curriculum. Several dealt with matters of personal health, hygiene, and safety.

IV. On-Site Visits by SEA Staff

1. Since the project has changed in scope, staffing, and emphasis from the time the State-team observed the project in 1969-70, no validation of its operation during the earlier period was practicable.
2. State evaluation of this project seems to have been quite informal (interview in the hallway or talk with teachers). Mr. Muffit of the SEA reported a two-day visit and evaluation in 1969-70 by four SEA staff members.
3. No precise, objective, quantitative data showing pupil achievement were collected by State.
4. Conclusions by State about readability difficulty of 1969-70 materials and instructional staff problems in 1969-70 seem to be justified; since teacher and pupil judgments obtained by our team were similar for the 1969-70 operations.
5. All other information collected by State seems to be subjective data collected unsystematically. See Exhibit #4.

V. Evaluation

1. Hard data collected by the Breathitt LEA and university consultants which showed significant growth of the ES 70 classes over non-project classes were found to be invalid.
2. Attitudinal data from pupils and teachers which were collected by the USOE team reflected much more positive findings in favor of the project operations between September and December 1970 than the State found in its earlier survey. The same instrument was used in both cases.

3. The team found no evidence that the course of study, LEMs (units), and ES 70 program had been widely disseminated and adopted by teachers and schools outside the project.

4. The team found that only one objective was being attained, Objective #1 the substantial revision, and implementation, and testing of the general science curriculum in Grade 9.

5. No computer work was being done in 1970-71. The project computer has been returned. There was little evidence that the other objectives were being achieved.

(See Exhibit 5 and 6.)

VI. Conclusions

1. Subjective observation, substantiated by our interviews with teachers and students, revealed considerable dissatisfaction about ES 70 as it was operated last year. These findings are similar to the SEA report for 1969-70 operations.

2. Except for several revised and improved LEMs (units) and improved instruction there is no hard evidence or test data to show ES 70 has been moving toward successful accomplishment of its objectives.

3. Subjective evidence collected this year shows wide acceptance of the value of ES 70 in the school by teachers, parents, and students.

4. Additional activities and extension of the project to other disciplines in the ES 70 mode would not be in the best interests of the school program.

5. Essential, promising activities in the project could be completed in 4 to 6 months with an additional $20,000 of continuation funding.

6. The rewritten science materials need more improvement. The students need more lab exercises, project work, resources, and research problems. For the fast and weak student the ES 70 procedure works. However, the presence of 6 adults in a class of 60 students may be as much a success factor as the non-lecture setting and "units" of work.

VII. Recommendations

1. USOE should continue to fund the project for the remaining 6 months (to June 30, 1971) in the amount of approximately $20,000, in addition to unexpended balance, under the following conditions:

   (a) Limit all activities to objective #1.

      (1) Revise current LEMs and write performance objectives for them and the 9th grade science program.

   (b) Inject more laboratory activities, using many more appropriate instructional materials and equipment.

   (c). Set up an evaluation design based on performance objectives.

2. Plan for dissemination of project and feedback of results.
3. Stop allocation of funds for any other sub-projects such as curriculum development of language arts, etc.
4. Eliminate funds and staff for electronic data processing.
5. Stop the facilities study.
6. Cut back severely the funds for travel, office supplies, and consultants.

Arno Jewett

Team Recommendations for SEA

SEA's Roles

1. On-site project review criteria and procedures should be standardized and known in advance by LEA's.

2. Each review should be conducted similarly according to a basic format, and similar findings should usually result in similar decisions. The local staff should be invited to assist the State staff in its evaluation.

3. Written reports of the SEA's findings and conclusions should be available to the local school district within 2-4 weeks of the visit, whenever possible. The project staff should discuss the SEA report with the local project director and, if necessary, take appropriate action.

4. All local projects should be evaluated on-site at least semi-annually with one or more follow-up visits during the calendar year.

5. On-site reviews should include an examination of fiscal records, local fiscal control practices, and report forms, in addition to program and management activities.

6. Project approval and funding should not be delegated by the SEA to the Kentucky regional Title III ESEA staff.

7. More Title III funds should be expended for exemplary programs and less money should be spent for regional administrative staff.

8. Less money should be allocated to support an equal-distribution-to-all policy.

9. Effective State assistance and ample time for improvement should be provided an ongoing project before a decision is made to terminate it.

10. All local districts should be encouraged to compete for Title III funds with or without Regional approval consistent with the approved Kentucky State Plan.

Despite at least four team requests for criteria and procedures used by the SEA in evaluating Title III proposals, no written and specific criteria and procedures were received. Therefore, Mission 3 was not accomplished.

The State Department should be commended for organizing and training local project evaluators. The contrast in the quality of project evaluation before and after the inservice training was readily evident.

Exhibit VIII

Exhs. VIII-X

COMMONWEALTH OF KENTUCKY
Department of Education
FRANKFORT 40601

January 25, 1972

Mr. Roland Sebastian, Coordinator
Guidance, Research and Curriculum Development
Breathitt County Schools
Jackson, Kentucky

Dear Mr. Sebastian:

As a result of a visit to your science program December 30, 1971 by Mr. Carroll Dexter, Consultant for In-Service Training, and myself, following are some comments of my observations of the instructional situation and the curriculum content.

Observations:

1. Students interviewed indicated a very positive response to the learning concepts.

2. The instructional staff appeared secure and confident in their efforts with a very positive attitude.

3. Students appeared to be working in different LEM's and permitted to move at their own rate.

4. Numerous students indicated they would like the opportunity to utilize this learning concept in other academic areas.

Curriculum Materials (LEMS)

1. Generally the learning activities in the LEM's are explicitly and clearly stated.

2. These learning packets are worthy of reproducing and disseminating to other schools.

3. The utilization of other resources is commendable with the limited resources available.

Recommendations for improvement and/or modification

The learning concepts are heavily knowledge level cognition, ie: simple recall of factual information. I would suggest the team explore additional learning at higher cognition levels. More application of science principles with emphasis on inquiry.

Even though there are many excellent inquiry activities, the student cognitive evaluation is almost totally limited to the knowledge level or simple recall of factual information.

I would urge the staff to establish some specific evaluation strategies systematically designed to measure the science principle and concepts learned. I would also encourage affective measurement to determine what types of experiences and resources that students respond to best.

The staff should identify additional resource materials for student use. Apparently resources are somewhat limited.

I am attaching some recommendations from Mr. Carroll Dexter dated January 21, 1972.

I hope you do not interpret my comments as being excessively critical of your instructional materials. However, one must recognize that the development of new learning approaches and curriculum materials is a never ending process. Therefore, I strongly recommend continuous evaluation and modification in relation to the evaluation findings.

You are aware that I am no longer with the ESEA Title III Office. However, as former Title III evaluator, there are significant improvements in the programs to what existed previously. The changing of the instructional staff and major modifications in the instructional materials and strategies have apparently made a great change for the good.

Very truly yours,

Bryan R. Muffett

Bryan R. Muffett
Director of Evaluation
Kentucky Department of Education

cc: Eugene Sebastian, Superintendent
Richard L. Winebarger, ESEA Title III Coordinator

COMMONWEALTH OF KENTUCKY
Department of Education
FRANKFORT 40601

January 21, 1972

Ray:

The following comments represent my overall view of the Breathitt County Science Program.

1. More questions utilizing Bloom's Taxonomy at the various levels of cognition could improve the questions and activity sections.
2. Additional resources, i.e., films, filmstrips; reference materials would enrich and enhance the program.
3. Number 1 above could be accomplished by a writing team or those teaching the course utilizing outside consultants who have had practical experience with this concept. Breathitt County officials should contact schools utilizing learning packets and obtain their assistance in re-writing of the materials.
4. Number 2 above will require additional funding. As you have already suggested to them, they should check into the use of 10% of their testbook funds which can be used to purchase instructional materials.

I believe the program will be enhanced if they can get these materials re-written prior to the beginning of the 72-73 school term.

One additional comment, there needs to be more emphasis placed on the utilization of their para-professionals, i.e., more involvement in teacher planning, more involvement with the students.

Carroll
Carroll

63

Exhibit IX

COMMONWEALTH OF KENTUCKY
Department of Education
FRANKFORT 40601

January 25, 1972

Mr. Roland Sebastian, Coordinator
Guidance, Research and Curriculum Development
Breathitt County Schools
Jackson, Kentucky

Dear Mr. Sebastian:

You have received or will receive within a few days a letter from Mr. Bryan R. Muffett, Director of Evaluation, Kentucky Department of Education, which sets forth his observations and conclusions as a result of his recent visit to the Breathitt County School System. His comments and that of Mr. Carroll Dexter, Consultant for In-Service Training, have to do with programs initiated under the "ES 70" project and now being implemented in some of your schools. Mr. Muffett was the Title III Evaluator until last year and was responsible for the evaluation of the "ES 70" project at an earlier date. He and Mr. Dexter are well acquainted with the activities underway in your Science Curriculum and I feel that their observations and recommendations are valid.

I hope that the information supplied by Mr. Muffett and Mr. Dexter will be of value to you in future planning and implementation of innovative programs in your district.

Very truly yours,

Richard L Winebarger

Richard L. Winebarger
Coordinator
Title III, ESEA

RLW:rdw

Exhibit X

EASTERN KENTUCKY UNIVERSITY
Richmond, Kentucky 40475

TITLE III, ESEA
Kentucky Region 6

January 28, 1971

Mr. Roland Sebastian
Coordinator, Guidance, Research
and Curriculum Development
Breathitt County Schools
Jackson, Kentucky 41339

Dear Mr. Sebastian:

Our visit to your Science Project was a result of hearing the State Title III evaluator comment, "There's a good thing happening in Breathitt County." I concur with the evaluators statement. The program you have developed affords better learning experiences than the typical science curricula found in the majority of our high schools.

While you developed the program with no assistance from my staff, I feel we should assist you in the dissemination of your product. At a meeting last week (January 20) I verbally described your program with positive results. One school administrator requested copies of your LEM's and stated they would become a part of their science activity.

I would recommend we prepare a slide presentation of your program in order to present graphically as well as verbally your accomplishments. Also, as I told you at the time of our visit, we will use our duplicating equipment to print additional copies of your learning modules.

We will make more definate plans after we hear from you.

Sincerely,

Fowler E. Jeffries

Fowler E. Jeffries
Director

crw

Exhibit XI

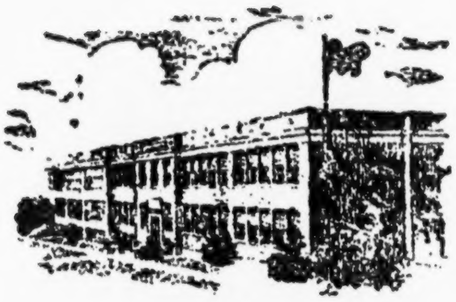
The following statement relative to the ES'70 science curriculum and the implementation process were made by Robert S. Lawson, former curriculum Director of the ES'70 Project in Breathitt County. Mr. Lawson is now directing the implementation process in the Breathitt High School science learning area and classroom.

The student learns through this process that much of learning is self-directed. There are many learning avenues available which he may follow in his pursuit of knowledge. This learning process (the enlightenment or broadening of a particular concept) places the student in a modern realm of education and learning.

Using a curriculum of this type causes the teacher to realize that an overall knowledge of a number of fields of learning is necessary to accommodate the student in his or her learning experiences. Functioning in a learning process of this kind enables the teachers' to view themselves, not only as a resource person, but as a director of learning, whereby, they are a guide to learning from which the students themselves can learn. Working in this environment, the teacher identifies certain student strengths and weaknesses (seld-discipline, reading abilities, social adjustment, the ability to follow directions, leadership abilities, the individual interests of the students, etc.).

In summary, this type of curriculum brings about a role change with the teacher and the student. The teacher is now a diagnostician, counselor, resource person, and director of learning, whereby, the student is a researcher of knowledge, an inquirer of "how" and "why", and most of all a critical thinker. Self-directed learning experiences better prepare the student in his ability to search for knowledge and understanding, and readies him for the educational and social environment in which he will be placed in the future.

Exhibit



Breathitt High School

MILLARD TOLLIVER, PRINCIPAL

TELEPHONE 666-2805

Jackson, Kentucky 41339

January 4, 1972

TO WHOM IT MAY CONCERN:

ES'70 has been operating in our school curriculum for a period of three years in the general science and physical science areas. We are amazed at the results in so short a time. Our students in these areas are happy with the opportunity to work at their own pace. They feel secure that they can and do learn more than they did in the past. Failure does not stalk them. Everyone accomplishes the goals set by himself. The students who have had two years under the ES'70 program show higher accomplishment of learning on their own initiative than any other group outside the program.

If I could have the opportunity to make a recommendation, I would like to see the ES'70 program broadened to include other areas such as Math, Social Studies, and Language Arts. The students enjoy the methods used, learn more in the same period of time, and become more self-reliant.

Millard Tolliver

Millard Tolliver
Principal

APPENDIX A

The following exerpts were extracted verbatim from the required quarterly reports submitted by Mr. William Ryan, Project Coordinator, pursuant to the provisions of grant number OEG-0-8-080314-2831(085), project number 8-0314.

Extract, Quarterly Report, Period 2/14/68 - 5/13/68

Major activities and accomplishments during this period.

(Note: Although authorized February 14, the office of the coordinator was not operational until March 1, 1968.)

The first month (March) was spent principally in the determination of approaches to be taken by the school district in the accomplishment of the local ES'70 project objectives. A program of direct communication with the state university system was established as a matter of first priority for these reasons: 1) The implications of ES'70 as they pertain to the education of teachers in the near future; 2) The disire to enlist university interest and commitment to ES'70 in this school district; 3) A desire to bring to bear upon ES'70 development the expertise and resources, both personal and material, of the universities and 4) A number of other cogent reasons of more local nature.

To accomplish the foregoing, meetings were requested, granted and held with university presidents, academic and graduate deans, deans of the various colleges within the universities, selected department heads, media specialists and curriculum advisors, and directors of program research and development. Three universities, University of Kentucky, Morehead State University, Eastern State University, set up these meetings on their own campus and the ES'70 Coordinator addressed each of them. After a 30-minute presentation of ES'70, a question-and-answer period was opened and lasted about two additional hours in each case.

The result of these meetings has been the commitment of these universities to provide every assistance possible in the development of ES'70 in the Breathitt County school system. Subsequent meetings requested by the universities have underscored their commitment to the project. Breathitt County schools have already been included in a university Talent Search proposal (approved and funded), a unilateral baseline student data survey (countywide) as part of a 21-county survey designed to provide statistics and measurements against national and area norms, and as a participant in the EPDA proposal for inservice teacher training and workshops. Direct assistance is being provided in recruiting new teachers to fill vacancies caused by normal attrition and by expansion.

The necessity for concurrent overhaul of elementary curriculum being readily recognized to prepare the students for the secondary ES'70 curriculum, one university has already sent a visitation team to survey needs and is in the process of drawing up a continuing program for elementary curriculum improvement in this district.

Deemed of equal importance to the university program was one of articulation and communication with State Department of Public Instruction personnel. Although ES'70 received the endorsement of the State Superintendent in its founding stages, recent changes in Department staffing made this articulation of prime importance.

Again a meeting was requested and granted. ES'70 was presented to the Assistant Superintendent for Public Instruction, Bureau of Vocational Education and selected staff members. The meeting, similar in nature to those held with the universities, resulted in assurance of interest and cooperation from the Bureau in the development of the ES'70 curriculum. A subsequent meeting was held with Area Superintendents (2) to inform them of the program. (One of the Area Vocational Schools operates an extension center on the Breathitt County High School Campus.)

The State Department of Public Instruction has evinced continued interest and support by assigning Department personnel as representatives to the ES'70 Network meetings in Atlanta and San Mateo, California. Representation of the Department has added measurably to the validity of ES'70 as a relevant, viable educational development program.

Meetings have been held with the high school faculty for the purpose of providing indoctrination with the concepts of ES'70 and its implications for the classroom teachers. Response to the program has covered a spectrum from "wait and see" to "how soon do we start". Universally, change is viewed as a threat - to the extremely provincial it is traumatic. The majority of the faculty is quite provincial, a characteristic of the Appalachian mountaineer. Understanding this, the reaction of the faculty and staff has been most heartening. Several of the teachers are enrolled in ES'70-oriented institutes this summer.

Further funding for the local project is expected under Title III, ESEA. The budget has been negotiated and the freeze on funds is expected to end soon. In addition, a proposal has been submitted to the Ford Foundation and other foundation proposals are pending.

Extract, Quarterly Report, Period 5/14/68 - 8/13/68

Major activities and accomplishments during this period.

a. Title III, ESEA budget negotiated May 17. Subsequently funded at $90,869.00 for the period 6/30/68 through 6/29/69.

b. Coordinator attended the San Mateo, California, Network meeting. Exemplary area projects were visited. The Kentucky State Department of Public Instruction continued its policy of sending a representative to these meetings.

c. Data processing equipment (IBM) selected to establish Cumulative Student Records (CSR) for all students, grades 1-12. Equipment will be installed in the ES'70 office in mid-September.

d. Two secondary teachers selected and set to attend Title X1 institute on Behavioral Objectives held at Duluth, Minnesota. The Coordinator visited the institute in mid-July for purpose of evaluation.

e. Two secondary teachers selected and sent to attend Title X1 institute on Reading Laboratories held at San Mateo, California.

f. Survey of data processing completed for E.F. Shelley Company.

g. Education Professions Development Act planning grant proposal submitted in the amount of $10,000.00.

h. Coordinator attended a meeting in Washington called by USOE/BR/DCVR, of ES'70 coordinators whose programs were scheduled for Title III ESEA funding. The purpose of the meeting was to explore possible cooperative endeavors.

i. Coordinator met with selected administrative staff and faculty members at West Virginia University, Morgantown, West Virginia. WVU has designed and implemented two courses on behavioral objectives in the College of Human Resources and Education. The Coordinator will return in September for two days to address a faculty-wide meeting and selected small-group seminars.

j. The Coordinator was invited by the state Superintendent of Public Insturction to meet with him and his cabinet for the purpose of a presentation and discussion of this project. The two-hour meeting resulted in affirmation of ES'70. The central computer facilities of the state were offered to the project and all Bureaus assured us of their desire to cooperate and assist. Secondary network possibilities were discussed briefly.

k. The Superintendent attended the Network Administrator's Workshop in New York. Valuable information of facility construction was gained from other Network superintendents.

l. The Breathitt County School District was one of ten in Kentucky and West Virginia selected by Appalachia Regional Laboratory to participate in a vocational guidance program. The program is being developed to meet the special needs of Appalachia and its youth. It is similar in structure and concept to the View program in California. This district has agreed to participate and will use the service for guidance purposes and as a source of material to be rewritten into behavioral objectives for integration into the ES'70 curriculum.

m. The Coordinator presented ES'70 to an Eastern Kentucky University institute composed of fifty elementary and secondary principals from eight states.

n. At the request of the state Superintendent of Public Instruction, ES'70 was represented at a meeting at which the new Kentucky State Plan for Title III was presented.

o. The Coordinator represented this district at a called meeting of the Appalachia Educational Laboratory at Charleston, West Virginia.

p. The Superintendent and the Coordinator attended a meeting of the Appalachian Regional Commission.

q. Arrangements have been completed and participants selected for a consortium staff from three universities (University of Kentucky, Morehead State University, Eastern Kentucky University) to meet September 6-7. This group will design an in-service basic education program on behavioral objectives for the BCHS faculty, set a schedule, then conduct the classes.

Further, a comprehensive program course will be designed for the BCHS faculty members selected as the writing team. The university group will continue their involvement by working with and as part of the writing team as consultants and advisors.

r. The Coordinator met with the Chief, Curriculum Division, South Carolina State Department of Public Instruction, to discuss ES'70. South Carolina in considering a major elementary and secondary curriculum overhaul. Selected ES'70 materials and other references were furnished for study by the South Carolina staff.

Extract, Quarterly Report, Period 5/14/68 - 8/13/68 (cont.)

s. The position of Curriculum Director on the ES'70 staff was filled. Robert Lawson joined the project August 5. Mr. Lawson holds B.S. and M. Ed. degrees. He has completed additional graduate study for certification in secondary administration. Teaching experience includes two years in Ohio working with the Quantitative Physical Science program developed by Dr. Sherwood Githens at Duke University.

t. Contact has been established and a meeting scheduled with the Director, Program Development Office, Appalachian Regional Commission. Possible funding of a preliminary site and design study for a new high school and the financing of the proposed construction will be explored.

u. The ES'70 office was moved to larger quarters at 1118 Main Street to accommodate the data processing and other staff functions of the project. The new office is within a block's distance of the High School.

Extract, Quarterly Report, Period 8/13/68 - 11/13/68

Major activities and accomplishments during this period.

a. A professional reading library has been established for the use of the ES'70 staff members, the writing team, the interuniversity staff and others desiring to pursue study or find information relevant to the ES'70 project. (See items n, r below).

b. Mr. Frank Groschelle, Program Director, Appalachian Regional Commission, met with the Coordinator to explore funding sources for a location and design study and a possible alternate financing of the construction of a new high school specifically appropriate to the ES'70 curriculum. ARC is willing to consider financial assistance and has requested that a preliminary proposal be submitted by this local district.

c. The Coordinator presented ES'70 to two district-wide meetings of faculty and staff (August 30, September 20). Following each of these presentations, an hour-and-one-half workshop was conducted with the high school faculty and staff. The agenda planned for the September 20 workshop included presentations by three of the teachers who had attended summer institutes connected with ES'70. At the conclusion of their presentations, a fifteen classroom-hour course entitled "Introduction to Behavioral Objectives in Curriculum Design" was offered to the teachers on a voluntary extra-curricular basis. A favorable response of about twelve (twenty per cent) was considered to have been good. When the response slips were turned in, it was discovered that an amazing ninety-two per cent of the total faculty and administrative staff of the high school had signed up for the course offering. (See item e below).

d. Prior to offering the course mentioned in the preceeding item, a two day meeting of the 12-member interuniversity staff was held at Morehead State University. The objective of the meeting was to complete the design of the above introductory course to be offered to the Breathitt County High School teachers. The objective was achieved.

The Washington State-Bellevue Project (Dr. Herbert Hite) book through Task III was selected for use in conjunction with VIMSET filmstrips 1 through 6. This proved to be an extremely effective choice for an introductory course.

e. Teacher-staff training was conducted by members of the interuniversity staff with all services to the course being supplied through the Curriculum Director. One of the assignments for the teachers was the preparation of a completely written behavioral objective for one of their own classes, including the rational to the student for the objective and a clear statement to the student on how he would be evaluated upon his attainment of the objective. As expected by this office and by the interuniversity staff, teachers brought back reports to their groups which included: (1) The role of the student in the educational process was clarified; (2) In all cases a higher than expected achievement level was attained; (3) Unexpected talent was demonstrated by some students who had no previous record of indication of such talent; (4) Class structure became better organized; (5) The student understood his objectives and exactly what was expected of him; (6) Better understanding developed between pupil and teacher; (7) Self realization by the student of his capabilities.

f. Mr. Lawson, Curriculum Director, attended a two-week New Accounts class conducted by IBM at their Cincinnati office. Orientation and familiarization with the data processing equipment to be installed in the ES'70 office was accomplished. During this period a visit was made to Northern Kentucky Vocational School, Covington, Kentucky, to view their data processing and computerized operation. Additional meetings were held with Mr. A. Wayne Roberts, Marketing Representative responsible for the Vocational School design and computer utilization. Mr. Roberts is also involved in Cincinnati area high school operations as a consultant to the school system on computer feasibility and utilization. A meeting was also held with Miss Ann Weber, IBM instructor and systems engineer responsible for Northern Kentucky Vocational School program in operation.

g. The Coordinator and Curriculum Director undertook the establishment of priorities in student information files and the design of the following: (1) Student master file; (2) Family environmental file; (3) Health and psychological record file; (4) Students interest file; (5) Academic and achievement file; (6) Miscellaneous and other information file.

Source document design is nearing the final draft stage. Production and dissemination of these documents for the purpose of obtaining the information required in the above files will be undertaken during the next reporting period. These files are being established on all students in the district school system, grades 1-12.

h. A series of half-day meetings with all elementary and secondary guidance counselors and the director of Project Opportunity together with the ES'70 staff was held. Miss Dorothy Bunyon, Southern Association of Colleges and Schools, attended one meeting and endorsed the completeness of the program. The result of these meetings was the establishment of a county wide testing program for grades 1-12 and the establishment of a calendar setting forth the dates the various test were to be administered. Numerous changes in the existing testing program were made, both in timing and in type to build a three-way conformity with the needs of the counselors, the requirements of the statewide testing program, and with the specific requirements of the ES'70 project.

(Although not within the period of this report, it should be noted that on November 21 at the Washington Network meeting, certain recommendations for testing of students were disseminated by E.F. Shelley and Company, consultants to the ES'70 Network. A study of these recommendations and their interrelationship with the recently established district calendar has been completed by the guidance counselors and ES'70 staff. The findings and recommendations of this study will be made part of a separate report to be distributed to the Bureau of Research, U.S. Office of Education, E.F. Shelley and Company and the Coordinators of the Network schools. In addition, copies of the results of this study will be directed to the ES'70 Executive Committee for their consideration.

i. The Coordinator has established preliminary coordination of this office with project Talent Search operated through Morehead State University.

j. The Coordinator has been appointed a member of the Task Force studying "The Feasibility of Computerization of Eastern Kentucy Schools".

k. The Coordinator is an appointed member of the State Committee of Educational Data Systems recently established by the State Department of Public Instruction. Two meetings of this new Committee have been held and plans for meeting on approximately a monthly basis have been made.

l. A group of about twenty persons consisting of the U.S. Office of Education interns from Washington visited this district. Great interest was expressed in the ES'70 project and many questions concerning it were directed to the Superintendent and the Coordinator.

m. The Coordinator attended a meeting of Network Coordinators at Bloomfield Hills, Michigan. The opportunity for this type of meeting in which provision for training, learning, and the exchange of experiences is one of the most meaningful Network activities. It is the opinion of this office that these meetings should continue to be held on a quarterly basis.

n. A tentative list of teachers qualified to take in-depth training in behavioral objectives as members of the curriculum writing team has been developed. Final determination of the makeup of the writing team will be made through personal interview. This will be undertaken and completed and reported upon during the next reporting period.

o. Preliminary arrangements have been made for members of the writing team (high school teachers) to receive graduate credit for their full time work during the summer of 1969. The three cooperating universities (Eastern Kentucky University, University of Kentucky and Morehead State University) have expressed their willingness to recognize the work being performed through the granting of graduate credit. This will amount to six credits being granted by the institution of the individual teacher's choice.

p. Two members of the interuniversity staff were sent to West Virginia University for a two day series of meetings and for the purpose of studying the work being done there in the teaching of behavioral objectives at the undergraduate level. Their reported experiences and continued input into this ES'70 project as a result has been extremely valuable.

q. The Coordinator and another member of the interuniversity staff made a two day visit to the Nova School in Fort Lauderdale. Again valuable insights were gained and evaluations made.

r. Two teachers and one guidance counselor in the district have voluntarily selected specific aspects of ES'70 as topics for research in their graduate course studies at State Universities. The studies being undertaken are in the following areas: (1) The changing role of the supervisor in an ES'70 school; (2) The teaching role in an ES'70 school, and (3) The counselor-student relationship in an ES'70 school. In addition, two inquires have been made by advanced graduate students not connected with the district.

The local teachers and guidance counselor have been loaned appropriate materials from the reading file established and maintained in the ES'70 office. Non-employees of the district pursuing graduate studies pertaining to ES'70 will be furnished materials appropriate to their study for a small fee based upon the actual coat of reproduction of the materials required.

s. Although not reported as a formal activity, inherent in all the foregoing has been the active support and counsel of the Superintendent. It is the conviction of this office that such support and counsel has been vital to the progress made and is a requisite for the success of the project throughout the Network.

Extract, Quarterly Report, Period 11/14/68 - 2/13/69

Major activities and accomplishments during this period.

a. The Coordinator attended the Educational Laboratory sponsored by National Aerospace Foundation in Washington, D.C. November 18-20. He was joined by the Superintendent and Curriculum Director at the ES'70 National Network Meeting in Washington the latter part of the same week.

b. The Coordinator met November 25 with the State Superintendent of Public Instruction and his cabinet for the purpose of presenting the USOE RFP for a state plan to develop a dissemination and implementation format for ES'70 curriculum on a state-wide basis.

c. The curriculum writing team consisting of eight members of the Breathitt County High School faculty was selected and began in-depth training in curriculum design consonant with the objectives of the organic curriculum. The team meets two evenings each week in formal session.

d. Design of the source document for the base line data for comprehensive student records was finalized. The document was produced, distributed and returned from all students in the district, grades 1-12. The information collected through this document is being transferred to the data processing files through the keypunch of eleven cards for each student. Upon completion of the keypunch operation, the data will be stored on the Honeywell 200 at Morehead State University. The punch cards will be returned to this office for file and use in print out of historical and analytical information as needed.

e. The local ES'70 project has been visited by variour representatives of the State Department of Public Instruction. Included among these were: Eugene W. Tallent, Coordinator of Evaluation, Bureau of Instruction; Eugene Robinson, Assistant Director, Division of Elementary Secondary Education; Patrick West, Supervisor, General Education, Bureau of Instruction; Dr. Ray Muffet, Director of Evaluation, Title III, Bureau of State and Federal Relations, and Lowell Clark, Assistant Director. Other visitors have included representatives from Model Cities Program, Bowling Green, Kentucky; Division of Health Education, Kentucky State Department of Health; William Strawn, Dean of Students, Lees College. Dr. Carter, Kentucky Representative for CEMREL, visited the project and endorsed it's objectives, offering all assistance from CEMREL that might be provided.

f. The Coordinator addressed an area-wide meeting called by the Kentucky River Development District in conjunction with the Kentucky Program Development Office (a commission appointed by the Governor). It was subsequently indicated that this office will be asked to assist in the drafting of the educational objectives for the Development District. Of the 15 districts in the state, the KRD will be the only one with specified educational objectives. The concept of the organic curriculum will provide the framework for the objectives of this eastern Kentucky area as represented in KRD.

g. At the specific request of the State Title III Office, the Coordinator accompanied a representative of that office to the Mid-Atlantic Title III Dissemination Conference held in Washington, D.C. January 27-29.

h. While in Washington at the above mentioned conference, the Coordinator was requested to testify before the House Education and Labor Committee by the chairman, Congressman Carl D. Perkins. The committee was conducting hearings on the extention of the Elementary and Secondary Education Act. The final transcript of the testimony given will be made available to the Coordinator when published in final form by the committee. Copies will be made available upon request.

i. Further investigation of funding and service assistance in the site selection, preliminary design, and construction of a new high school for this district was undertaken. Meetings were held with Mr. Frank Groschelle, Director, Kentucky Program Development Office; James Melton, Assistant Superintendent, for Finance and Administration, State Department of Public Instruction, and others. Contact has been established with the regional office of Educational Facilities Laboratory. Information and advice received through these meetings will be acted upon as deemed appropriate.

j. The final draft of the local systems analysis and PERT chart has been completed. After review by consultants from E.F. Shelley and Company, the local PERT will be prepared for production and distribution.

k. Application for funding of this project for an additional two-year period was submitted to USOE/DCBR.

l. Mailing lists have been developed and classified. These lists have been transferred to data processing where self-adhesive labels are printed out on a general or selective basis.

m. This district has agreed to cooperate fully with the UCLA Project in which they propose to establish a central bank of curriculum materials based upon the behavioral sciences.

Extract, Quarterly Report, Period 2/14/69 - 5/13/69

Major activities and accomplishments during this period.

a. An operational systems analysis was completed and the appropriate PERT chart developed for the local effort. Necessary graphics were applied to permit offset reproduction.

b. The Coordinator attended the meeting of coordinators at Houston, Texas March 3-4 and the Network meeting at San Antonio, Texas, March 5-7.

c. Miss Betty Rowland, Special Staff writer for the Kentucky Education Association spent over a half-day in the office gathering material for an article in the KEA Journal on Breathitt County.

d. The Curriculum Director presented the ES'70 filmstrip at a Board meeting of the Kentucky River Economic Development Council.

e. The Coordinator accepted appointment to the Manpower Committee of the KREDC (d. above) with assignment emphasis on educational matters and concerns.

f. The Mott Foundation community program is under thorough study by a group of community leaders with wide support from individuals and organizations. The Coordinator is serving on the executive committee.

g. The Advisory Council to the State Department of Education on Title III, ESEA, recommended that ES'70 not be funded by the state for reason of its national structure and implications. The Council felt that such a broad effort should be supported at the federal level. Strong endorsement of the ES'70 project was given, however.

h. In view of g. above, the Coordinator, through Washington offices, requested a policy statement from Dr. Peter Muirhead, Acting Commissioner of Education, on the continuation funding of ESEA Title III projects originally approved and funded by USOE. The subsequent statement made in reply was to the effect that unless a project had been discontinued through appropriate evaluation, review and discontinuation procedures, it was incumbent upon the states to continue the funding of these projects. Further, that should funding be denied at the state level, USOE would undertake to withhold the funds involved from the block grant to the subject state and proceed to provide continuation funding directly from the federal office.

i. Breathitt County School District was host to members of the Educational Staff Seminar. The Seminar is composed of personnel in Washington offices of Congress, Bureau of the Budget, HEW, and others.

j. Breathitt County School District, ES'70 Office, was host to the quarterly meeting of the Kentucky Educational Data Systems Association (KEDSA). The Coordinator was active in the formation of the Association composed of personnel from the State Department of Education Computer and Data Processing Division, and administrative personnel from school districts throughout the state now, using or planning for data processing and computer use.

k. Mr. Roland Sebastian joined the ES'70 staff in the position of Guidance Director. Mr. Sebastian brings a forceful background of experience to the project. He has had "on-line" experience as a counselor in the school system (secondary) and served for six years as Assistant Director, Guidance Services, Kentucky State Department of Education. A lifelong resident of the county, Mr. Sebastian is kneenly aware of the needs of the students and the area.

Major areas of responsibility in curriculum development will be the provision of relevant job descriptions written in behavioral terms for translation into instructional modules by the curriculum writing team. Mr. Sebastian will also prepare the in-service training to be conducted for guidance counselors to prepare them for their new role under the organic curriculum concept and implementation.

l. Robert E. Pruitt, Deputy Director, BR/DCVR, USOE, and Dr. George Donahue, E.F. Shelley & Company, visited the district. While here, they viewed the outstanding elementary facility and program at the LBJ School (ungraded, continuous progress, team teaching, "unwalled" learning areas) grades 1-5. (This facility is under further construction to double its' capacity, consolidate two more schools and include grades 1-6.)

Mr. Pruitt and Dr. Donahue represented the USOE and Network positions in the project before the State Advisory Council on Title

Extract, Quarterly Report, Period 2/14/69 - 5/13/69 (cont.)

III hearing on project continuation. The Coordinator presented the local effort. The Council subsequently reiterated the previous position held to the effect that projects of such major scope should be supported at the federal level.

m. The Coordinator attended a meeting in Washington May 8-9 called to develop recommendations to BR/DCVR relative to the funding of supporting projects. The establishment of five centers across the nation to work in concert with specified Network school districts was the ultimate recommendation. Since BR/DCVR was represented, adequate report on the meeting is already available to the Office.

n. Funding approved for provision of salary for Coordinator and one secretary plus minor items under Section 4(c) VEA 63 for period 2/14/69 - 2/13/70.

o. The curriculum writing team is beginning production of the first draft copies of complete instructional modules. These are being written at three levels of student accomplishment in each module: Basic, Achievement and Honors. Multi-media learning experiences are employed to enable the student to develop his performance capabilities to the level chosen by him.

Extract, Quarterly Report, Period 5/14/69 - 8/13/69

Major activities and accomplishments during this period.

a. This project participated in the statewide Title III Dissemination Conference held at the University of Kentucky May 20-1. As noted in the previous report, requests were received for over 500 pieces of literature and information from the project. These requests were made by educators from all over the state and represented both local, parochial and higher education personnel in attendance at the conference.

b. The Coordinator presented all developments in the ES'70 project, both locally and nationally, to the teaching staff of the entire district at a special teachers meeting.

c. The Coordinator made a presentation of the ES'70 project to the Breathitt County School Advisory Council. The E.F. Shelley and Company filmstrip and tape presentation was used together with selected remarks concerning the local effort.

d. An in-depth study of the proposed learning experience modules (LEMS) was made by the ES'70 staff for the purpose of providing final recommendations to be made to the writing team prior to their full time employment in developing individual LEMS for implementation in the fall semester, 1969.

e. A conference was held to review the Stout State University "American Industries" program and materials. Valuable vocational information is available from this program for the writing of a comprehensive curriculum.

f. Arrangements for continued funding of the curriculum project under Title III, ESEA, directly from USOE/BESE, in Washington were completed. Total new funding granted this project amounted to $66,200. This, combined with a carryover of $16, 653.72, provides $82,853.72 for FY'70.

g. The project was visited for two days by Ken Smith and Tom Embry from the Broward County School District, Nova System. The exchange of accomplishments, ideas and concepts were valuable to both districts.

h. Two members of the ES'70 staff attended an EPIC Workshop sponsored by the State Department of Education in Frankfort. EPIC had previously been evaluated by the coordinator for possible use in evaluation of the project and found to be inappropriate. This inappropriateness was basically due to lack of sophistication of the system and its inflexibility.

i. The writing team began full time work in writing behavioral objectives for 9th year General Science. The ES'70 staff edited and prepared the material for reproduction and use in the classroom by the students. The writing team is composed of four science teachers, one each mathematics, business education and language arts and humanities.

Learning experience models are being developed in the following areas: typing (self taught for report writing); research reporting; scientific method; geologic history; measurement; chemistry; physics; astronomy; biology; use of the microscope; weather and an introductory unit introducing the student to the learning experience modules.

j. Members of the writing team attended a one-day workshop at

Morehead State University at which they examined materials from textbook companies and audio-visual producers.

k. Vocational imput was provided by the Guidance Director for incorporation into the LEMS being prepared by the writing team.

l. The ES'70 staff met with Breathitt County High School Guidance Counselors concerning the needs of students and for inputs into the curriculum being developed.

m. The staff guidance director attended a meeting at Morehead State University sponsored by the Kentucky State Department of Public Instruction for the purpose of a seminar on programming guidance activities and counselling.

n. The local district superintendent and the ES'70 Coordinator attended a statewide vocational education meeting called by the State Board of Education. During the hearing procedures on the vocational changes to be made in vocational education extension centers as a result of previous Board action, the Coordinator was requested by the State Board to prepare a position paper relating to the concerns of the Board and the problems generated by the resolution under discussion. This paper was prepared and presented to the Board and copies were distributed to USOE/BR/DCVR; USOE/BESE and to the Network coordinators.

o. The district superintendent and the ES'70 Coordinator attended the Willingboro, N.J. ES'70 Network Meeting June 26-7.

p. The Coordinator presented a reaction paper to the program and agenda established by the executive committee for the Willingboro Meeting. The paper was and has been since then consistently ignored.

q. A flow scart depicting the organizational pattern for curriculum development was developed for the district curriculum effort.

r. Renovation was begun of a special learning area for housing the organic curriculum. Provisions are being made for team teaching, multi-mode-media mix of learning resources and provision for teacher aides to operate in the area.

s. The former superintendent (Mrs. Marie R. Turner) and the Coordinator attended a two-day conference sponsored by USOE/EPDA/COP in Frankfort on the development of the local Career Opportunities Program. This district has been selected as one of the three sites in Kentucky to implement this program with a budget of $237,500. the first year.

t. The Coordinator has been appointed as chairman of the recreation committee, Whitehouse Committee on Youth for this area.

u. The Coordinator spent three days in Washington, D.C., on project business July 16-18.

v. The Coordinator attended a state meeting called by the State Department for the purpose of meeting with USOE/BESE Title III personnel regarding the Kentucky State Plan for Title III activities.

w. The guidance director attended the Willingboro, N.J. Workshop for the development of behavioral objectives.

x. Conferences with the Breathitt County High School staff finalized the scheduling for the implementation of the organic curriculum, General Science, 9th year level.

y. Dr. Jack Morgan, Assistant Professor, College of Education, University of Louisville, was retained as a special consultant for student evaluation by this project.

z. The Coordinator was issued a special invitation to attend a meeting of the Division of Elementary and Secondary Education, State Department of Education.

Extract, Quarterly Report, Period 8/14/69 - 11/13/69

Major activities and accomplishments during this period.

a. The Coordinator and the Curriculum Director attended the EPIC evaluation for Title III meeting sponsored by KIDC.

b. The Coordinator addressed the Breathitt County High School faculty and staff during the in-service training days prior to the opening of school. Dr. Jack Morgan of the University of Louisville also participated in this portion of the program.

c. The Coordinator was assigned the responsibility of developing the

Career Opportunities Project under EPDA. The meeting was held with the Vice President of Research and Development, Morehead State University for the purpose of developing the basic structure and approach to the project. This district will enter into a subcontract with Morehead State University through which the University will provide specified higher educational courses leading to teacher certification for the participants in the COP project conducted in Breathitt County.

d. The Curriculum Director and Vocational Guidance Director of the ES'70 staff attended a Title III Evaluation conference sponsored by the State Department of Public Instruction.

e. The Coordinator attended a state-wide meeting of Title III Project Directors sponsored by the State Department of Public Instruction.

f. The Coordinator and Curriculum Director met with administrative and College of Education personnel from Morehead State University for the purpose of preliminary negotiations concerning the COP contract.

g. The Coordinator attended the Coordinators Meeting and the Network Meeting at Quincy, Massachusetts. The Principal of the Breathitt County High School, our ES'70 School, attended the Principals Meeting and the Network Meeting at Quincy. The Breathitt County Superintendent joined the Coordinator and Principal at Quincy for the Network Meeting.

h. The Coordinator was assigned the responsibility for the development of a preliminary proposal under the USOE Dropout Prevention program.

i. Day-to-day evaluation of the organic curriculum and operation in the special learning area is continuing. Evidence is being gathered to support the observation that certain modifications in the curriculum structure and classroom operation are necessary. It is becoming especially evident that a curriculum for slow learners and low achievers is necessary. A decision on the nature and content of this curriculum will be made and further report given in the next quarterly report.

j. The Guidance Director worked with the high school counselors to provide testing data, aptitude scores, etc. to ES'70 teachers for evaluation purposes in the learning area.

k. Dr. Jack Morgan, Professor of Education, University of Louisville, conferred with the ES'70 staff on the development of a plan for evaluation of students achievement in the new curriculum. Dr. Morgan subsequently administered the Watson-Glaser Critical Thinking appraisal and a basic science achievement pre-test. The pre-test was the General Science Cooperative test.

Extract, Quarterly Report, Period 11/14/69 - 2/13/70

Major activities and accomplishments during this period.

a. The ES'70 staff met with the three team teachers and the Principal of the ES'70 high school on matters pertaining to the grading system to be used in a continuous progress curriculum while still tied to a traditional system. Final resolution of the problems presented will incur considerable more study and investigation prior to their solution.

b. Members of the inter-university council representing the University of Kentucky, Eastern Kentucky University and Morehead State University together with Dr. Jack Morgan of the University of Louisville, met with the ES'70 staff for the purpose of discussing the project progress to date. The council members also undertook a visit to the learning area where the organic curriculum is in operation. The reaction from the council to the progress of the program was one of approbation. They were particularly impressed by the quantity and quality of learning material prepared for the classroom by the ES'70 staff and the curriculum writing team.

c. The Coordinator, Curriculum Director and Guidance Director of the ES'70 staff attended a Statewide Title III Directors Meeting.

d. The Coordinator attended a meeting of selected personnel held at CEMREL, St. Louis, Missouri, held for the purpose of setting forth the objectives of the ES'70 Network in behavioral terms.

e. Negotiations were completed by this office with Morehead State University on a subcontract between this LEA and the University pertaining to the University's subcontractual performance under the EPDA/COP project. The State Department of Public Instruction was represented at all major meetings held and concurred in the project submitted by this district and the subcontract entered into with Morehead State University.

Extract, Quarterly Report, Period 11/14/69 - 2/13/70 (cont.)

f. The Coordinator set up a meeting at the University of Kentucky with participants from the State Department of Public Instruction, Kentucky Research Coordinating Unit and the Office of the Director of Research and Development, College of Education, University of Kentucky, for the purpose of discussing the preliminary proposal to be submitted by this district to USOE/BVAL for an exemplary vocational educational project to be imlpemented in this district. The project proposed by this district is one of six being considered for funding by USOE under Parts C & D of the Vocational Educational Act of 1968.

g. By special invitation the Coordinator attended the State Board of Education meeting at which the Spindletop Research Foundation report on vocational changes in Kentucky was submitted. The findings of Spindletop and a prior research by Dr. James and Dr. Johns were substantially the same in concept as the recommendations made in the special paper submitted to the Board by the Coordinator at an earlier date.

h. The Coordinator was assigned the responsibility of developing a special summer program for the handicapped under Title VI-A, ESEA. The program has received approval and will be funded. The project has been acclaimed as the most unique and relevant project of the fifty-eight (58) being funded in this state. Stated in behavioral terms, the project proposes to provide a medical-academic bridge in the education of the handicapped through the employment of six doctoral candidates in special education from the College of Education at the University of Kentucky together with six senior medical specialists from the University of Kentucky Medical Center. The project will run eight (8) weeks with one (1) week spent in staff orientation, six (6) weeks in working with the 90 handicapped children selected for the project, with the last week spent in final report writing and data analysis.

i. The Superintendent and the Coordinator attended a National Aerospace Conference for the Advancement of Education held in Washington in January.

j. Dr. James C. Parker and two other members of the Graduate School of Educational Administration and Supervision, University of Tennessee were visitors to the project.

k. The Coordinator has been asked to meet with graduate seminars at the University of Tennessee and also to make a presentation to the staff and faculty of the University College of Education on matters pertaining to innovation in education. The date of April 21 has been established for these meetings.

l. Special learning experience modules have been developed for 9th year General Science students who are unable to handle the standard curriculum. These students have been grouped together under a new teacher added to the staff for the purpose of administering this curriculum.

m. Constant day-to-day evaluation and observation of the new curriculum in the form in which it has been distributed to Network schools and USOE/BR/DCVR has resulted in the design of a new format for the curriculum. The writing team is preparing units in accordance with the new format and these will be tested in the classroom. It is expected that they will be proven valid and thereby provide a model for all organic curriculum development in all disciplines in the future.

n. The inter-university council made an urgent request that funds be provided to the appropriate extent which would enable more frequent meetings of the council and closer contact with the project.

* *